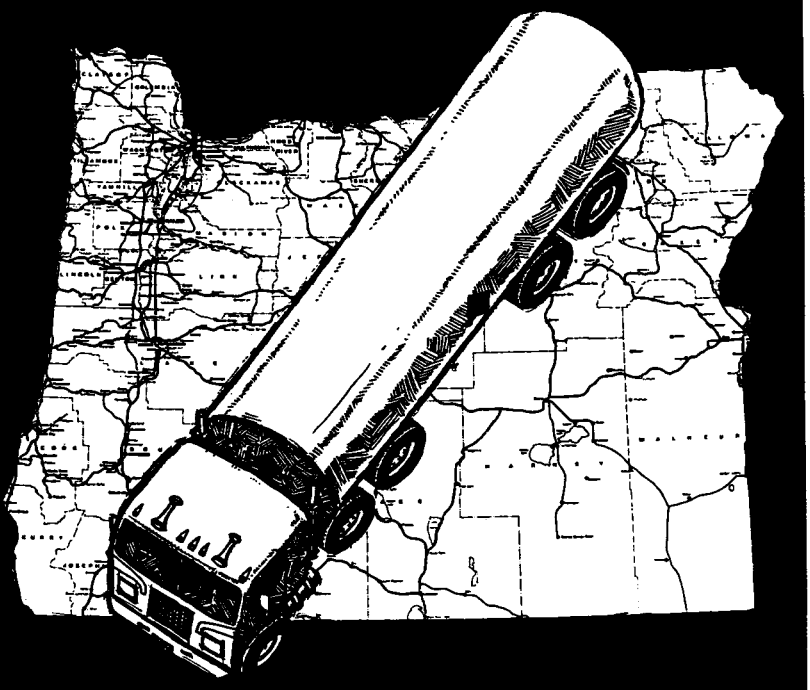
HAZARDOUS MATERIAL MOVEMENTS ON OREGON HIGHWAYS



A Flow Study by

The Public Utility Commission of Oregon and
The Oregon Department of Transportation

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HAZARDOUS MATERIAL MOVEMENTS

INTRODUCTION

This study is in answer to recommendations of the Oregon Interagency Hazard Communication Council. In its December 1986 report, assessing the regulation of hazardous material movements in Oregon, the Council identified a need to quantify the level of risk to the state's citizens. It was requested the Oregon Public Utility Commission and the Department of Transportation jointly engage in an on-highway survey of movements.

The intent of the survey was to provide details of the number and type of hazardous materials transported on Oregon highways, the primary hazard classes, shipment quantities, container types, load origins and destinations, the routes traveled, and the counties and cities exposed to this traffic.

The study was made possible through the Oregon Public Utility Commission's Motor Carrier Safety Assistance Program contract with the United States Department of Transportation, Office of Motor Carrier Safety.

SURVEY METHODOLOGY

The recording of information from the movement of hazardous materials was accomplished at 10 truck weigh-scale locations in Oregon and 1 in Washington. Truck scales were used because they provide existing facilities for separating hazard-placarded trucks from the general traffic stream. The locations included five on Interstates 5 and 84, three on U.S. highways and three on Oregon state routes. Seven of the scale sites were ones outside Portland, all well within 100 miles of that commercial zone. Since the Portland area generates the heaviest concentration of hazardous material movements, quantifying the activity in this northern region describes a large degree of the total risks to the state.

In surveying movements, Oregon Department of Transportation and Public Utility Commission personnel stopped hazard-placarded trucks, recording the general hazard class and examining shipping papers for each specific material's shipping name, identification number, quantity, container type, origin, destination, and routes traveled. Vehicles carrying Other Regulated Material (ORM), though not required to be marked with placards, were also included in the survey of hazardous materials.

At each site, this detailed survey of movements was conducted over a three-day period (beginning on a Monday or Tuesday morning at 12:01 a.m. and continuing for 72 hours through Wednesday or Thursday). The study was completed in three phases during 1987.

PHASE ONE - The initial on-highway recording of hazardous material movements occurred during the second and third weeks of March. On March 9, 10, and 11, traffic was surveyed east on Interstate 84 at Wyeth, north on U.S. 30 at Scappoose, and south on S.R. 99W at Dayton. On March 16, 17, and 18, traffic was surveyed south on Interstate 5 at Woodburn, south on S.R. 99E at Hubbard, east on U.S. 26 at Brightwood and west on S.R. 6 at Tillamook.

PHASE TWO - In the second phase of on-highway surveys, the same seven sites outside the Portland area were revisited during the first and second weeks of August. The repeat survey sought comparative information revealing seasonal differences in truck traffic, in general, and hazardous material movements, in particular. Wyeth, Scappoose and Dayton were revisited on August 3, 4 and 5. Woodburn, Hubbard, Brightwood and Tillamook were revisited on August 10, 11 and 12.

PHASE THREE - The third phase of survey activity addressed hazardous material movements entering Oregon through four border locations. Two Oregon ports-of-entry surveyed traffic entering the state from the south and one surveyed movements entering from the east. In lieu of a port-of-entry at Oregon's immediate northern border, a scale location in Washington was selected to survey movements into the state from the north.

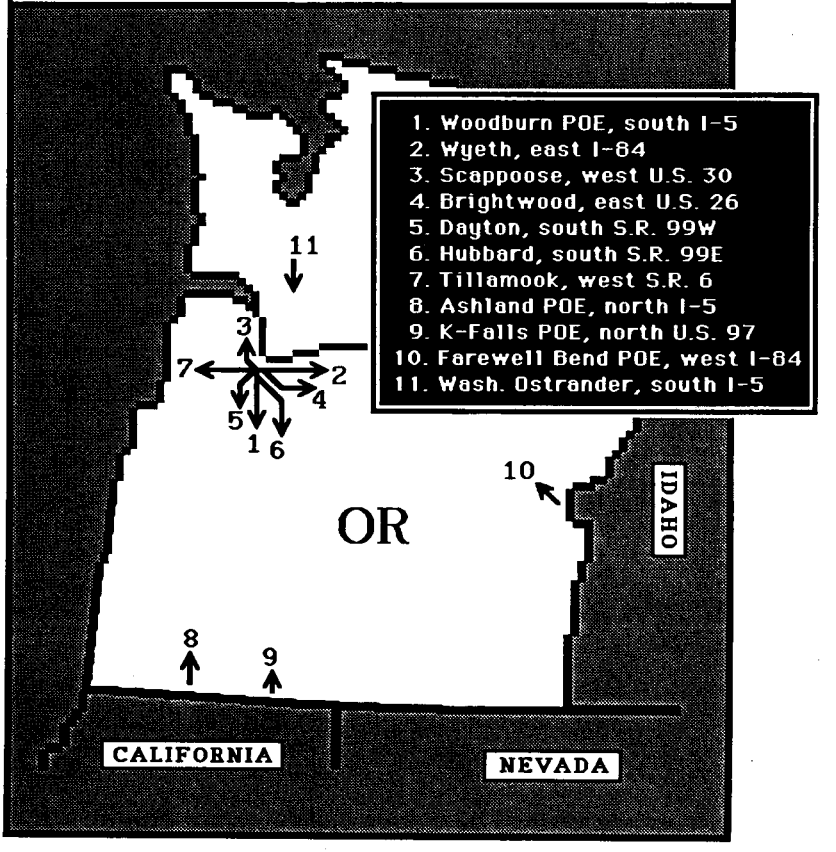
Hazardous material movements entering through the Oregon border ports-of-entry were surveyed during the third week of November, the 17, 18 and 19. Traffic from California and Nevada was surveyed on Interstate 5 at the Ashland POE and on U.S. 97 at the Klamath Falls POE. Traffic from Idaho and other eastern states was surveyed on Interstate 84 at the Farewell Bend POE. Because the ports-of-entry are located some distance within the border, surveying traffic at these sites excludes shipments terminating in the cities of Ashland, Klamath Falls and Ontario.

To gauge the movement of hazardous materials entering Oregon from Washington and the north, traffic was surveyed at the Washington Ostrander weigh-scale about 50 miles north of Portland. Surveys at this Interstate 5 site were conducted during the third week of August, the 17, 18 and 19. The Ostrander facility, while the closest available for an on-highway survey of this type, is located north of Kelso and Longview, Washington. Shipments originating there, or in other cities south of Ostrander, are not included. The survey at the Washington site was possible through the cooperation of the Washington Utilities and Transportation Commission and the Washington State Patrol.

HAZARDOUS MATERIAL PLACARD COMPLIANCE

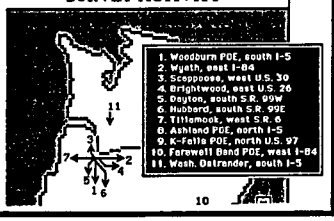
While information was recorded from placarded vehicles, inspectors visited each location in March to selectively examine trucks and cargo. A two-man team inspected 35 van/trailers in an attempt to gauge the number of vehicles transporting hazardous materials without necessary placards. Only one violation was discovered. A vehicle transporting paint, stopped on 99E at the Hubbard scale, had incorrectly classified the material on shipping papers and was without required placards.

LOCATIONS OF ON-HIGHWAY HAZARDOUS MATERIAL SURVEY ACTIVITY



EXECUTIVE SUMMARY

LOCATIONS OF ON-HIGHWAY HAZARDOUS MATERIAL SURVEY ACTIVITY



SURVEY SUMMARY

A total of 2,511 hazardous material-placarded vehicles were surveyed on Oregon highways at 11 truck weigh-scale locations. Oriented to activity in the state's northern region (81% of surveys were conducted outside the Portland area), the study primarily analyzes the outward reach of movements originating there. To sample inbound movements, however, 4 points of entry into Oregon were also surveyed.

TOTAL TRUCK TRAFFIC

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Counts of all trucks traveling the highways during the survey period (including both full and empty vehicles) show the most traffic on I-5 at Woodburn. While Woodburn counted an average of 96 trucks per hour, Ashland and Ostrander averaged 70 and Wyeth 46.

A seasonal difference in traffic was most apparent at Brightwood, where a repeat survey counted twice as many trucks traveling east on U.S. 26 in August as in March. Total truck traffic counts actually decreased in August at the Woodburn and Scappoose scales.

AVERAGE TOTAL TRUCK TRAFFIC

RATES PER DAY & PER HOUR AT EACH SURVEY SITE

SITES SURVEYED IN BOTH MAR. AND AUG.	AVG. TOTAL TRUCK TRAFFIC PER DAY	AVG. TOTAL TRUCK TRAFFIC PER HOUR	PERCENT AND TOTAL TRUCK TRAFFIC INCREASE
WOODBURN	2,314	96	↓ 16%
WYETH	1,104	46	0
SCAPPOOSE	535	22	↓ 11%
BRIGHTWOOD	242	10	↑ 50%
DAYTON	500	21	↑ 4%
HUBBARD	336	15	↑ 2%
TILLAMOOK	123	5	↑ 12%
SITES SURVEYED DURING ONLY ONE 3-DAY PERIOD	**AVG. TOTAL TRUCK TRAFFIC PER DAY**	**AVG. TOTAL TRUCK TRAFFIC PER HOUR**	
ASHLAND	1,678	70	
OSTRANDER	1,693	71	
FAREWELL BD.	854	36	
KLAMA. FALLS	602	25	

HAZARDOUS MATERIAL MOVEMENTS

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For all 11 survey sites combined, hazardous materials were aboard 5.5% of total truck traffic. At the 7 sites with repeat surveys, haz. mat. movements comprised 5.2% of total traffic in March and 8.0 percent in August.

Hazardous materials appeared in highest percentages at Brightwood (11.2% in March and 14.1% in August). Most shipments at Brightwood were gasoline and diesel destined for central Oregon.

One-third of the surveys at Wyeth were of ORM shipments. Without those unusual movements of hazardous waste, the percent of traffic carrying hazardous materials drops from 7.6 to 4.8 at Wyeth.

AVG. HAZ. MAT. MOVEMENTS

RATES PER DAY & PER HOUR AT EACH SURVEY SITE

SITES SURVEYED IN BOTH MAR. AND AUG.	AVG. HAZ. MAT. MOVEMENTS PER DAY	AVG. HAZ. MAT. MOVEMENTS PER HOUR	PERCENT AND HAZ. MAT. TRAFFIC INCREASE
WOODBURN	141	5.8	21%
WYETH	84	3.5	112%
SCAPPOOSE	39	1.6	13%
BRIGHTWOOD	31	1.3	66%
DAYTON	25	1.0	39%
HUBBARD	14	.6	13%
TILLAMOOK	6	.3	11%
SITES SURVEYED DURING ONLY ONE 3-DAY PERIOD	**AVG. HAZ. MAT. MOVEMENTS PER DAY**	**AVG. HAZ. MAT. MOVEMENTS PER HOUR**	
ASHLAND	78	3.3	
OSTRANDER	42	1.7	
FAREWELL BD.	25	1.0	
KLAMA. FALLS	12	.5	

Scappoose ranks third in percentage of traffic carrying hazardous materials. Nearly 30% of all vehicles surveyed at this location were delivering gasoline and diesel from Portland to Longview, Washington.

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MOVEMENTS BY HAZARD CLASS

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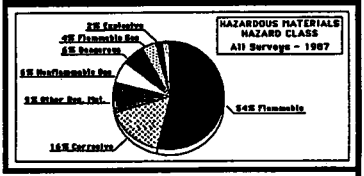

FLAMMABLE or COMBUSTIBLE placards marked more than half of the total 2,511 vehicles surveyed in 1987 (54%). The movements were largely deliveries of gasoline and diesel to cities in northern Oregon.

CORROSIVE-placarded vehicles were the second most common observed (16%). Corrosive material often originated in the state of Washington, Portland, and Canby, Oregon, but was prominent among movements surveyed entering the state through the Ashland port-of-entry.

Flammables and corrosives are even more common among hazards transported when DANGEROUS-placarded vehicles are included. The majority of DANGEROUS movements were carrying both flammables and corrosives.

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TOP TEN HAZARDOUS MATERIALS
From Survey Activity at the 7 Sites Outside Portland

COMMODITY	HAZARD ID No.	No. of Shipments	Avg. Wt. or Vol.
Gasoline	UN1203	649	8,000 gal.
Fuel oil, diesel	NA1993	302	6,700 gal.
Hazardous waste	NA9189	153	42,000 lbs.
Sodium hydroxide, liq.	UN1824	133	34,500 lbs.
Paint, lacquer base	UN1263	108	2,500 lbs.
Battery, wet with acid	UN2794	88	18,000 lbs.
Oxygen	UN1072	84	6,500 lbs.
Liquefied petroleum gas	UN1075	46	4,500 gal.
Compound, cleaning, liq.	NA1760	46	2,400 lbs.
Oxygen, refrig. liq.	UN1073	41	22,000 lbs.

TOP TEN HAZARDOUS MATERIALS
From Survey Activity at the Peninsula-Entry into Oregon

COMMODITY	HAZARD ID No.	No. of Shipments	Avg. Wt. or Vol.
Paint	UN1263	58	4,000 lbs.
Paint related material	NA1263	33	1,100 lbs.
Corrosive liquid, n.o.s.	UN1760	33	5,500 lbs.
Compound, cleaning, liq.	NA1760	33	2,700 lbs.
Battery, wet with acid	UN2794	31	12,000 lbs.
Gasoline	UN1203	27	6,100 gal.
Resin solution	UN1866	26	9,000 lbs.
Flammable liquid, n.o.s.	UN1993	26	4,400 lbs.
Fuel oil, diesel	NA1993	20	5,000 gal.
Corrosive solid, n.o.s	UN1759	15	7,100 lbs.

SHIPMENTS BY SHIPPING NAME

A total of 208 different hazardous materials were aboard the 2,511 movements surveyed. Flammables and corrosives, the most common hazard classes, were transported under the most different shipping names.

Gasoline and fuel oil, diesel were the most common commodities transported. The next most common material was paint, especially in movements entering the state from the south. Hazardous waste, destined for deposit in Arlington, Oregon, was the third most common material shipped. Two corrosives, liquid sodium hydroxide and wet batteries, rank fourth and fifth in total numbers.

The 2,511 vehicles surveyed transported 3,637 total shipments (1.5 avg. per vehicle).

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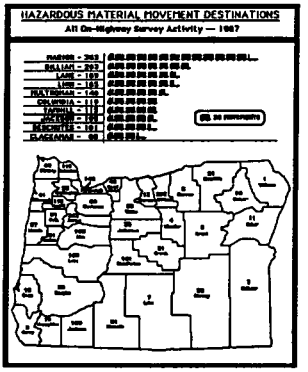

MOVEMENT ORIGIN AND DESTINATION

In surveys of hazardous material movements at the 7 scale sites outside Portland, 3 of every 4 vehicles originated in Portland. Of all movements surveyed at those 7 sites, only 16% were passing through Oregon to another state. In the survey of movements at Ostrander and the ports-of-entry, 35% of all vehicles surveyed were passing through the state to destinations elsewhere.

The 2,511 movements surveyed made a total of 2,189 deliveries within Oregon, serving 186 cities in the state's 36 counties.

Marion County received the most shipments (363), the majority being gasoline and diesel. Linn and Lane counties, south of Marion, each received less than half as many shipments.

POINT-OF-EXIT

Hazardous materials destined for Washington state were largely flammables. Materials transported eastward included more corrosives and a number of nonflammable gases. Material transported southward was largely corrosive.

Hazardous material movements exited Oregon in the greatest numbers at northern points:

- 45% of vehicles surveyed at Ashland, exiting at Portland via I-205
- 30% of vehicles surveyed at Scappoose, exiting at Rainier
- 21% of vehicles surveyed at Wyeth, most exiting at Umatilla
- 54% of vehicles surveyed at Farewell Bend, exiting at Umatilla
- 46% of vehicles surveyed at Klamath Falls

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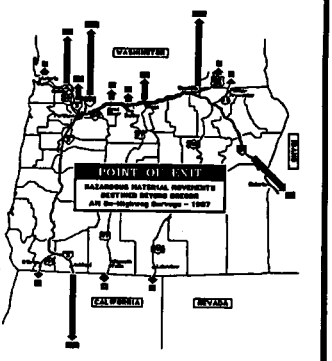

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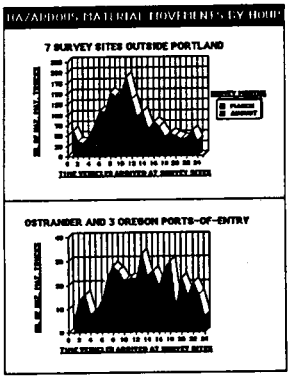

MOVEMENTS BY TIME OF DAY

Most hazardous material movements were surveyed on the highway between 6 a.m. and 6 p.m. In the first surveys at 7 locations outside Portland, 70% arrived at the scale during this 12-hour period. The greatest number (38%) were observed between 8 a.m. and noon. In the latter surveys at 4 points of entry into Oregon, the flow of placarded vehicles averaged 8 per hour between 7 a.m. and midnight.

Flammables and combustibles were observed most often during daylight hours (70 percent between 6 a.m. and 6 p.m.). Shipments of corrosives and nonflammable gases followed similar hours.
DANGEROUS-placarded movements were most often transported at night (70 percent between 6 p.m. and 6 a.m.).

HAZ. MAT. MOVEMENTS ACCORDING TO COUNTY AND CITY OF DESTINATION

In individual county analyses, this section details the number and types of hazards destined for Oregon cities. A listing is also provided of most common commodities aboard movements. Based on the various surveys conducted, the information is a snapshot of haz. mat. activity during a brief period of time.

In addition to details of movements serving cities within a county, the analysis includes the number and type of hazards passing through the area to destinations elsewhere. Adding this number results in a more complete picture of the "total exposure" of a county to hazardous material movements.

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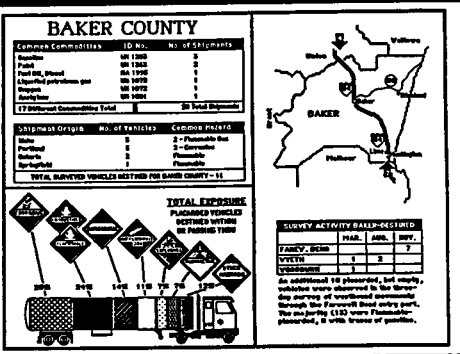
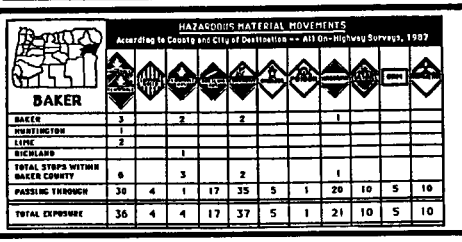




GLOSSARY OF TERMS

1

HAZARDOUS MATERIAL - Materials, substances or waste determined to be capable of posing an unreasonable risk to health, safety, and property when transported in commerce.
HAZARDOUS SUBSTANCES - Commodities not considered harmful in small quantities, but capable of posing a danger when released in large amounts. A "reportable quantity" has been established, by the Environmental Protection Agency (EPA), for each substance.
HAZARDOUS WASTE - Discarded materials regulated by the EPA because of public health and safety concerns. Hazardous wastes are fully regulated from their time of creation to proper discard. Hazardous wastes may also be classified as hazardous materials.

UN/NA NUMBER - An identification number assigned to each specific hazardous material. UN numbers, assigned by the United Nations, are internationally consistent numbers used for both domestic and international shipments. NA numbers, North American identifiers, are used primarily for domestic and Canadian shipments.

HAZARD CLASS - A group of materials sharing a common property, such as flammability, corrosiveness, or radioactivity.

PLACARD - A diamond-shaped, color-coded sign displayed on each of the four sides of a truck identifying the hazardous material transported. Placards are not required for shipments of Other Regulated Material (ORM) and small shipments of certain other materials (under 1,000 pounds).

HAZARDOUS MATERIAL MOVEMENT - Throughout this report, "movement" represents an entire truck carrying hazardous materials. On-highway surveys in 1987 recorded information from a total of 2,511 trucks, or "movements".

SHIPMENT - A delivery of hazardous material. A truck laden with both gasoline and diesel, for example, is one movement with two shipments.

SHIPPING PAPER - A shipping order, bill of lading, manifest, or other document issued by the carrier with information identifying the hazardous material transported. Hazardous material must be described in the following order: shipping name, hazard class, UN/NA number and total quantity.

GLOSSARY OF TERMS

2

FLAMMABLE - Liquids with a flash point below 100° F. Examples: gasoline, paint, acetone.

COMBUSTIBLE - Less volatile than flammables, combustible liquids have a flash point of 100° F. to 200° F. Examples: fuel oil, diesel, kerosene.

FLAMMABLE SOLID - Any solid material, other than an explosive, which is liable to cause fires through friction, retained heat from manufacturing or processing, or which can be ignited readily and when ignited burns so vigorously and persistently as to create a serious transportation hazard. Examples: matches, calcium carbide, fusee.

FLAMMABLE GAS - Any compressed gas indicating certain qualities of flammability in prescribed tests. Flammable gases are easily ignited, with flame and heat rate resembling an explosion. Examples: liquefied petroleum gas, hydrogen, acetylene.

NONFLAMMABLE GAS - Any compressed gas other than a flammable compressed gas. Nonflammable gases will not burn but may support combustion. Examples: oxygen, carbon dioxide, chlorine.

CORROSIVE - Any solid, liquid, or gaseous substance that burns, irritates, or destructively attacks organic tissue (such as skin, lungs, or stomach) or has a severe corrosion rate on steel. Examples: batteries, sulfuric acid, sodium hydroxide (lye).

OXIDIZER - A substance yielding oxygen readily to stimulate the combustion of organic and inorganic matter. Oxidizers are regulated primarily for their potential to feed a fire occurring in other materials.
Examples: hydrogen peroxide, nitric acid, silver nitrate.

GLOSSARY OF TERMS

3

ORGANIC PEROXIDE - An organic derivative of the inorganic compound hydrogen peroxide (one or more of the hydrogen atoms have been replaced by organic radicals). Examples: methyl ethyl ketone peroxide, organic peroxide.

POISON - Gases, liquids, substances, or solids toxic to man and dangerous to life. **POISON A** - Poisonous gases or liquids of such nature that a very small amount is dangerous to life. **POISON B** - Substances, liquids, or solids (including pastes and semi-solids), other than Class A or Irritating materials, known or presumed to be toxic to man. Examples: phenol, arsenic acid, chloropicrin, carbamate pesticide.

EXPLOSIVE - Any chemical compound, mixture, or device whose primary purpose is to function by explosion, that is, with substantially instantaneous release of gas and heat.
CLASS A - Material or devices presenting a maximum hazard through mass detonation. Class A examples - high explosives, torpedoes, detonators.
CLASS B - Materials or devices presenting a flammable hazard and functioning by rapid combustion rather than detonation. Class B examples - special fireworks, ammunitions.
CLASS C - Minimum hazard explosives (including certain types of fireworks, primers and blasting caps) carrying restricted quantities of Class A or Class B explosives. Class C examples - signal flare, small arms ammunition.

BLASTING AGENTS - Material, designed for blasting, with very little probability of accidental initiation to explosion.

DANGEROUS - A warning placard often used when transporting two or more hazard classes per vehicle, in lieu of multi-placarding.

RADIOACTIVE - Any material that spontaneously emits ionizing radiation (and has a specific activity greater than 0.002 micro-curies per gram). Examples: iodine, cobalt, enriched uranium, plutonium.

OTHER REGULATED MATERIAL - Material not meeting any of the definitions of the other hazardous material classes, but posing an unreasonable risk to health and safety when transported in commerce so as to require some regulation.
ORM-A - Material with an anesthetic, irritating, toxic, noxious, or similar property causing extreme annoyance or discomfort in the event of leakage. Examples: carbon tetrachloride, chloroform.
ORM-B - Material (including a solid when wet with water) capable of causing significant damage to a vehicle from leakage during transportation. Examples: quick lime, gallium metal.
ORM-C - Material with other inherent characteristics not described as an ORM-A or ORM-B but which makes it unsuitable for shipment unless properly identified and prepared. Examples: excelsior, magnetized material.
ORM-D - Material, such as a consumer commodity, subject to regulation but presenting a limited hazard during transportation due to its form, quantity and packaging. Example: household cleaning supplies.
ORM-E - Material not included in any other hazard class, but regulated as a hazardous waste or hazardous substance. Examples: polychlorinated biphenyls, dichlone, ferrous sulfate.

PART I

GENERAL SUMMARY

HAZARDOUS MATERIAL SURVEY SUMMARY

Information was recorded on a total of 2,511 hazardous material-placarded vehicles during on-highway surveys in March, August and November at the 11 truck weigh-scale locations. The greatest number of hazardous material movements, 848, were observed southbound on Interstate 5 at the Woodburn port-of-entry in March and August surveys there. Surveys of traffic eastbound on Interstate 84 through Wyeth recorded information from 506 total movements. The pace of movements at the Ashland port-of-entry (234 vehicles surveyed during a single three-day period) rivaled that of Woodburn and Wyeth.

LOCATION	HAZARDOUS MATERIAL MOVEMENTS SURVEYED March / August / November			TOTAL
Woodburn	384	464		848
Wyeth	162	344		506
Ashland			234	234
Scappoose	110	124		234
Brightwood	65	123		188
Dayton	62	86		148
Ostrander		125		125
Hubbard	38	43		81
Farewell Bend			74	74
Klamath Falls			37	37
Tillamook	17	19		36
				2,511

For all 11 locations combined, regardless of time of year, hazardous materials were surveyed at an average rate of 46.5 movements per day, or nearly 2 per hour.

AVERAGE TOTAL TRUCK TRAFFIC

RATES PER DAY & PER HOUR AT EACH SURVEY SITE

SITES SURVEYED IN BOTH MAR. AND AUG.	AVG. TOTAL TRUCK TRAFFIC		MAR→AUG TTL. TRK. TRAFFIC CHANGE
	PER DAY	PER HOUR	
WOODBURN	2,314	96	↓ 16%
WYETH	1,104	46	0
SCAPPOOSE	535	22	↓ 11%
BRIGHTWOOD	242	10	↑ 50%
DAYTON	500	21	↑ 4%
HUBBARD	358	15	↑ 2%
TILLAMOOK	123	5	↑ 12%

SITES SURVEYED DURING ONLY ONE 3-DAY PERIOD	AVG. TOTAL TRUCK TRAFFIC	
	PER DAY	PER HOUR
ASHLAND	1,678	70
OSTRANDER	1,693	71
FAREWELL BD.	854	36
KLAMA. FALLS	602	25

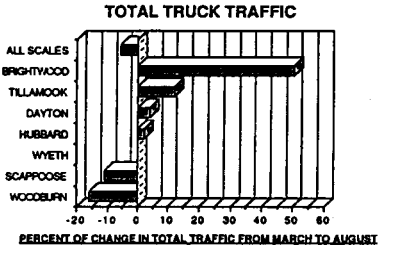
TOTAL TRUCK TRAFFIC

Total truck traffic (including both vehicles weighed at the scale and bypassing the scale empty) was greatest on Interstate 5 at the southbound Woodburn scale. Averaging the numbers from weighmaster counts during the three-day periods in March and August shows Woodburn with 2,314 total trucks per day, 96 per hour. Counts of traffic southbound at the Washington Ostrander scale on Interstate 5 were 37 percent lower at 1,693 total trucks per day, 71 per hour. Traffic entering Oregon on Interstate 5 through Ashland moved at a rate similar to Ostrander's, 1,678 per day, 70 per hour.

Truck traffic counts at locations on Oregon's U.S. highways and state routes were greatest on U.S. 97 at the Klamath Falls POE (602 per day average, or 25 per hour). Other busy truck routes include U.S. 30 northbound through Scappoose (535 per day, 22 per hour) and S.R. 99W southbound through Dayton (500 per day, 21 per hour).

Traffic counts (at the 7 scale locations with surveys in both months) show a surprising decrease in total truck activity in August. Overall, 6 percent fewer trucks moved across the 7 scale locations during the August three-day period. The busiest sites, Woodburn, Wyeth and Scappoose, counted fewer or the same total trucks crossing the scales.

Truck activity at the Woodburn scale fell 16 percent in August, 11 percent fewer trucks crossed at Scappoose and, by coincidence, the number of trucks was unchanged at the Wyeth site from March to August.



While the Hubbard and Dayton scales remained virtually unchanged and Tillamook saw a 12 percent increase, Brightwood had the greatest fluctuation in numbers. Traffic eastbound through that scale jumped 50 percent, from 579 trucks in March to 870 in August.

AVG. HAZ. MAT. MOVEMENTS

RATES PER DAY & PER HOUR AT EACH SURVEY SITE

SITES SURVEYED IN BOTH MAR. AND AUG.	AVG. HAZ. MAT. MOVEMENTS		MAR→AUG HAZ. MAT. TRAFFIC INCREASE
	PER DAY	PER HOUR	
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SCAPPOOSE	39	1.6	13%
BRIGHTWOOD	31	1.3	89%
DAYTON	25	1.0	39%
HUBBARD	14	.6	13%
TILLAMOOK	6	.3	11%

SITES SURVEYED DURING ONLY ONE 3-DAY PERIOD	AVG. HAZ. MAT. MOVEMENTS	
	PER DAY	PER HOUR
ASHLAND	78	3.3
OSTRANDER	42	1.7
FAREWELL BD.	25	1.0
KLAMA. FALLS	12	.5

HAZARDOUS MATERIAL MOVEMENTS

In the March survey at the first 7 scale locations, hazardous materials accounted for 5.2 percent of total truck traffic. That percentage increased to 8.0 when the sites were revisited in August. Traffic southbound on S.R.99E at the Hubbard scale included the lowest percentages of hazardous material movements (3.6 percent in March and 3.9 percent in August) and traffic eastbound on U.S. 26 at Brightwood included the highest percentages (11.2 percent in March and 14.1 percent in August).

For all locations combined, hazardous materials were aboard 5.5 percent of the total truck traffic across the 11 scale locations. After averaging March and August numbers for the 7 scales with repeat survey activity, the 11 scales rank in the following order:

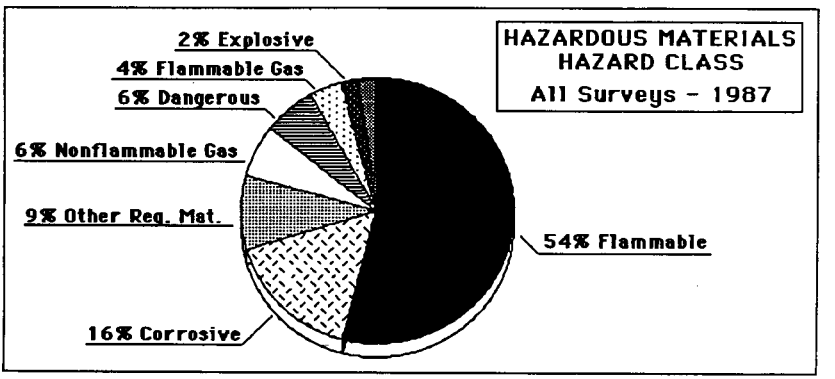
SCALE	HAZARDOUS MATERIAL PERCENT OF TRUCK TRAFFIC
Brightwood	**12.9%**
Wyeth	**7.6%**
Scappoose	**7.2%**
Woodburn	**6.1%**
Dayton	**4.9%**
Tillamook	**4.9%**
Ashland	**4.7%**
Hubbard	**3.8%**
Farewell Bend	**2.9%**
Ostrander	**2.5%**
Klamath Falls	**2.1%**

For all 7 locations with surveys in both months, hazardous material movements increased 44 percent from March to August. A total of 838 trucks were surveyed in March and 1,206 in August. The 112 percent increase in movements on Interstate 84 at Wyeth was due to an unusual number of ORM shipments (hazardous waste from a "Superfund" cleanup in Washington). Increased shipments of flammable liquids accounted for an 89 percent jump in Brightwood's eastbound traffic.

SURVEYS CONDUCTED DURING A 3-DAY PERIOD IN MARCH AND AGAIN IN AUGUST										SURVEYS CONDUCTED DURING A SINGLE 3-DAY PERIOD					
	NUMBER OF MOVEMENTS									NUMBER OF MOVEMENTS					
HAZARD	WOODBURN	YAKIMA	SCAPPOOSE	BRIGHTWOOD	DAYTON	HUBBARD	TILLAMOOK	TOTAL	PERCENT	ASHLAND	KLAMATH FALLS	FAREWELL BEND	VA. OSTRANDER	TOTAL	PERCENT
FLAMMABLE	489	177	145	171	111	53	29	1175	57.6	91	19	18	48	176	37.5
CORROSIVE	190	50	53	4	4	8	3	312	15.3	57	6	17	18	98	20.8
OTHER REG. MAT.	21	184	10		2			217	10.6	2		1	9	12	2.5
NONFLAMMABLE GAS	51	32	14	2	18	4		121	5.9	10		6	25	41	8.7
DANGEROUS	36	34	1	3		4		78	3.8	51	4	10	8	73	15.5
FLAMMABLE GAS	20	11	9	8	12	11	4	75	3.7	7	6	3	5	21	4.5
EXPLOSIVE	11	6	2		1			20	.9	6		4	10	20	4.3
POISON	15	5						20	.9	6			1	7	1.5
OXIDIZER	10	3				1		14	.7	1	1	4		6	1.3
FLAMMABLE SOLID	5	3						8	.4	2	1	1	1	5	1.1
RADIOACTIVE		1						1	.1			10		10	2.1
ORGANIC PEROXIDE										1				1	.2
TOTAL	848	506	234	188	148	81	36	2041		234	37	74	125	470	

MOVEMENTS BY HAZARD CLASS

Of the 2,511 total hazardous material movements surveyed, 1,351 or 54 percent were liquids placarded FLAMMABLE or COMBUSTIBLE. This was the most common hazard transported at 10 of the 11 survey sites. Traffic eastbound at the Wyeth scale included 1 percent more movements of Other Regulated Material (ORM - hazardous waste) than flammable. Corrosive-placarded vehicles accounted for 16 percent of the 2,511 total movements surveyed, placing a distant second in the most common hazards transported.



Separating the latter 4 surveys of movements entering Oregon, from the first 7 survey locations, reveals differences in the types of hazards moving. Among those entering the state, fewer vehicles were placarded FLAMMABLE (38 percent of 470 total). More of the trucks were marked CORROSIVE (21 percent) and, most notably, nearly 16 percent were placarded DANGEROUS. The DANGEROUS-placarded vehicles were usually transporting flammable and corrosive liquids, together.

Throughout this report, vehicles placarded FLAMMABLE and those placarded COMBUSTIBLE are combined as FLAMMABLE. In the first surveys at the 7 sites outside Portland, roughly 1 of every 4 vehicles marked FLAMMABLE actually carried combustible liquids. Federal regulations permit this, but not the reverse (placarding a flammable as combustible). In the latter surveys of movements at Ostrander and the ports-of-entry, only 21 of the 176 total FLAMMABLE-placarded vehicles were actually transporting combustibles.

TOP TEN HAZARDOUS MATERIALS

From Survey Activity at the 7 Sites Outside Portland

COMMODITY	HAZARD ID No.	No. of Shipments	Avg. Wt. or Vol.	
Gasoline	UN1203	649	8,600	gal.
Fuel oil, diesel	NA1993	382	6,700	gal.
Hazardous waste	NA9189	163	43,200	lbs.
Sodium hydroxide, liq.	UN1824	133	36,600	lbs.
Paint, lacquer base	UN1263	100	3,600	lbs.
Battery, wet with acid	UN2794	89	15,200	lbs.
Oxygen	UN1072	54	6,500	lbs.
Liquefied petroleum gas	UN1075	48	4,500	gal.
Compound, cleaning, liq.	NA1760	46	5,400	lbs.
Oxygen, refrig. liq.	UN1073	41	25,900	lbs.

TOP TEN HAZARDOUS MATERIALS

From Survey Activity at the Points-of-Entry Into Oregon

COMMODITY	HAZARD ID No.	No. of Shipments	Avg. Wt. or Vol.	
Paint	UN1263	65	4,600	lbs.
Paint related material	NA1263	33	1,100	lbs.
Corrosive liquid, n.o.s.	UN1760	33	5,500	lbs.
Compound, cleaning, liq.	NA1760	33	2,700	lbs.
Battery, wet with acid	UN2794	31	12,800	lbs.
Gasoline	UN1203	27	6,100	gal.
Resin solution	UN1866	26	9,500	lbs.
Flammable liquid, n.o.s.	UN1993	26	4,400	lbs.
Fuel oil, diesel	NA1993	20	5,800	gal.
Corrosive solid, n.o.s	UN1759	15	7,100	lbs.

SHIPMENTS BY SHIPPING NAME

Analysis by chemical shipping name reveals 208 different hazardous materials aboard the 2,511 movements surveyed in 1987. Flammables and corrosives, the most common hazard classes, were transported under the most different shipping names. Flammable or combustible liquids total 65 of the 208 hazardous materials. A total of 38 different corrosive materials were recorded.

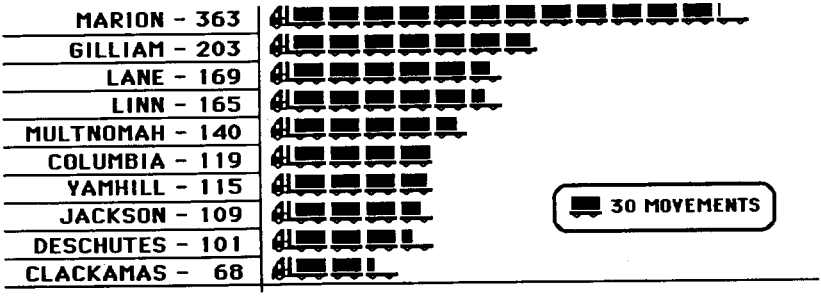
The most common commodities listed on the shipping papers of all vehicles surveyed were gasoline and diesel. Primarily a result of the survey activity at the locations outside Portland, petroleum products accounted for 1,078, or 30 percent, of all recorded shipments. The liquids, transported in tankers, averaged 6,000 - 9,000 gal. The next most common commodity aboard all vehicles surveyed was paint, due in large part to the surveys of movements at Ostrander and the ports-of-entry. In the earlier surveys at 7 sites outside Portland, paint ranked fifth on a list of top ten materials. The surveys of movements into the state found 14 percent of those vehicles carrying paint or paint related material. Paint was packaged in cans, pails, or drums, and shipped in quantities ranging from 3,000 - 5,000 pounds average. The placement of hazardous waste among the most common commodities is owing to the unusual number of movements (from a Superfund cleanup) included in the August survey at Wyeth. The hazardous waste, transported in dump trucks, averaged 43,000 pounds.

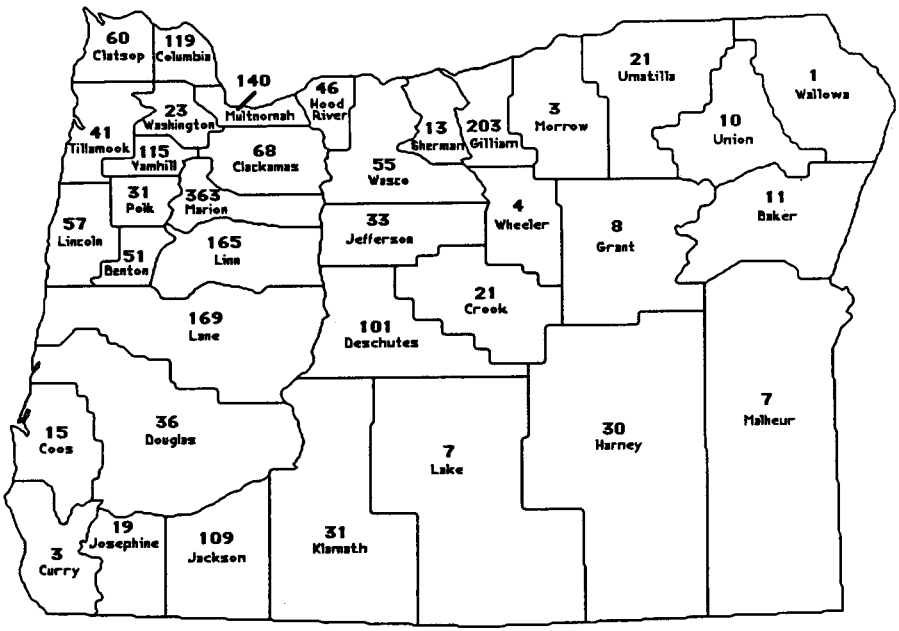
A listing of all other commodities and their shipping number follows in the 11 sections summarizing each individual survey location. An average shipment weight or volume for each material is also included there. Shipping papers usually listed materials by weight (in pounds), rather than volume. Because of an often wide range of weights or volume per shipment, averaging the amounts is not always representative of individual shipments. The surveys at Ostrander and the ports-of-entry provided the best information concerning the container types used in transport. The sections summarizing those survey locations include notes about container types per commodity.

Many of the hazardous material movements surveyed were transporting more than one commodity. Aboard the 2,511 vehicles, in fact, were 3,637 total shipments (1.5 average per vehicle). The 470 vehicles surveyed at Ostrander and the three ports-of-entry carried the most shipments per vehicle, an average of 1.8.

HAZARDOUS MATERIAL MOVEMENT DESTINATIONS

All On-Highway Survey Activity — 1987





MOVEMENT ORIGIN AND DESTINATION

In the survey of hazardous material movements at the 7 scale sites outside Portland, roughly 3 of every 4 trucks originated in Oregon (91 percent of them in Portland). Fully 84 percent of the movements originating in Oregon were destined for Oregon cities. Only 16 percent were passing through to serve another state.

The other 1 of every 4 trucks surveyed outside Portland, those originating in another state, had the same distribution plan. Fully 84 percent of those movements were destined for Oregon cities and 16 percent intended to pass through to serve another state.

In the survey of hazardous material movements at Ostrander and the three ports-of entry, 8 of every 10 vehicles originated in the contiguous states of Washington, California, Idaho and Nevada (83 percent, actually). Of the 470 vehicles surveyed entering the state, 292 (65 percent) were serving Oregon cities. The remaining movements were just passing through Oregon to destinations elsewhere.

The 2,511 hazardous material movements surveyed made a total of 2,189 deliveries within Oregon, serving 186 cities in the state's 36 counties. A total of 363 movements were destined for Marion County, most carrying gasoline and diesel. Lane and Linn counties, south of Marion, each received less than half as many movements. Gilliam County ranks second in destinations because of the movements of ORM through the Wyeth scale to the Chem Security Systems chemical waste disposal site near Arlington.

The location of surveys, and the direction of traffic there, influences the ranking of counties served by hazardous material movements. This is somewhat apparent in the accompanying map of movement destinations. For example, the 140 vehicles destined for Multnomah County and the 23 destined for Washington County were from survey activity at Ostrander and the three ports-of-entry. There are considerably more movements of hazardous materials within Multnomah and Washington counties than that sampling indicates.

Common Commodities	ID No.	No. of Shipments
Paint	UN 1263	73
Fuel oil, diesel	NA 1993	38
Battery	UN 2794	37
Paint related material	NA 1263	33
Compound, cleaning, liquid	NA 1760	27
Gasoline	UN 1203	26
141 Different Commodities Total		685 Total Shipments

Origin	No. of Vehicles	Hazard
Portland	150	61% Flammable
California	118	28% Corrosive
Washington State	13	9 - Nonflammable gas
Other States	48	10 - Radioactive
Other Oregon Cities	15	6 - Corrosive
TOTAL SURVEYED VEHICLES DESTINED NORTHWARD - 344		

NORTH 344

SURVEY ACTIVITY NORTHWARD			
	MAR.	AUG.	NOV.
ASHLAND			107
WYETH	47	58	
SCAPPOOSE	31	42	
FWELL. BEND			40
KLAM. FALLS			17
TILLAMOOK	1	1	

61 EAST

SURVEY ACTIVITY EASTWARD			
	MAR.	AUG.	NOV.
WYETH	25	29	
OSTRANDER		4	
KLAM. FALLS			2
ASHLAND			1

Common Commodities	ID No.	No. of Shipments
Paint	UN 1263	7
Battery	UN 2794	5
Hydrochloric acid	UN 1789	5
Sodium hydroxide, liquid	UN 1824	5
Sodium hydroxide, dry	UN 1823	4
Nitrogen, refrigerated liquid	UN 1977	4
65 Different Commodities Total		132 Total Shipments

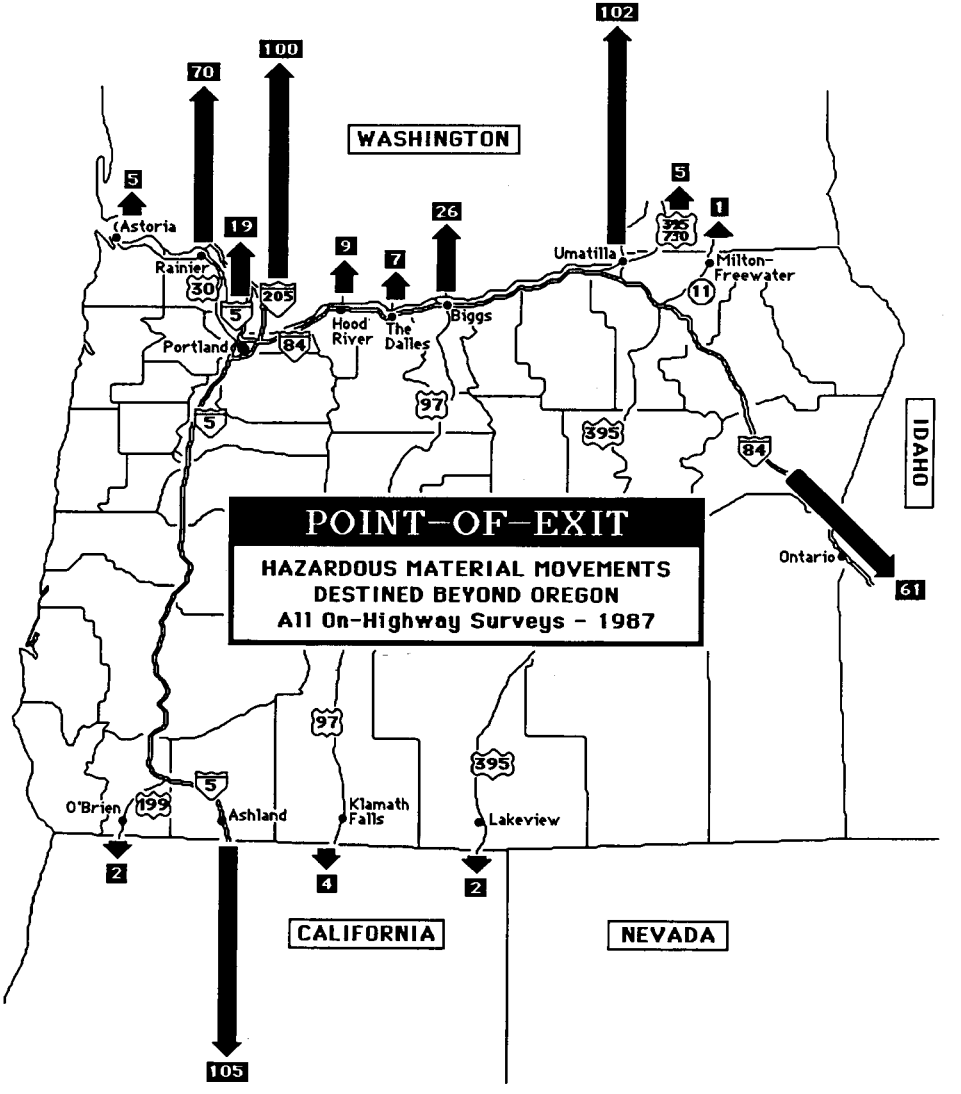
Origin	No. of Vehicles	Hazard
Portland	36	10 - Corrosive
Washington State	15	6 - Nonflammable gas
Other Oregon Cities	6	3 - Corrosive
California	4	2 - Flammable
TOTAL SURVEYED VEHICLES DESTINED EASTWARD - 61		

Common Commodities	ID No.	No. of Shipments
Battery	UN 2794	39
Paint	UN 1263	8
Phenol	UN 1671	6
Explosive mine		5
Formaldehyde	UN 2209	4
Waste, flammable liq., n.o.s.	UN 1993	4
64 Different Commodities Total		153 Total Shipments

Origin	No. of Vehicles	Hazard
Washington State	50	17 - Flammable
Portland	27	13 - Corrosive
Canby, Or.	24	All Corrosive
Other Oregon Cities	5	
Other States	7	
TOTAL SURVEYED VEHICLES DESTINED SOUTHWARD - 113		

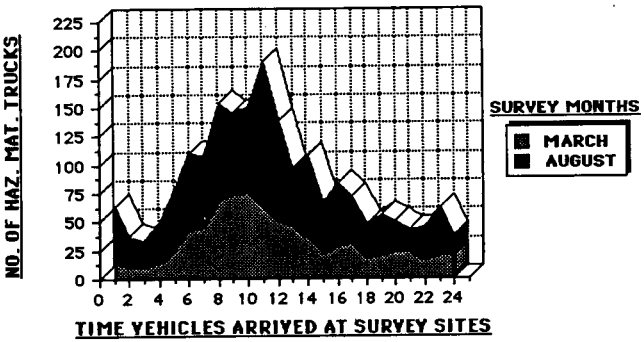
113 SOUTH

SURVEY ACTIVITY SOUTHWARD			
	MAR.	AUG.	NOV.
WOODBURN	53	40	
OSTRANDER		15	
HUBBARD	1	3	
ASHLAND			1

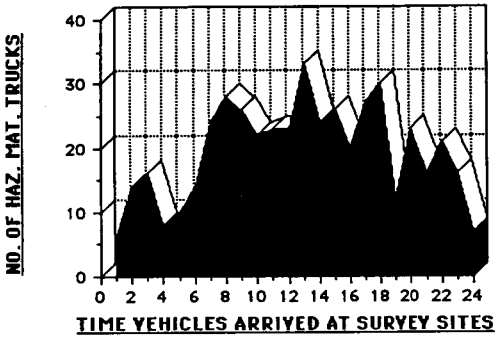

POINT-OF-EXIT
HAZARDOUS MATERIAL MOVEMENTS
DESTINED BEYOND OREGON
All On-Highway Surveys - 1987
WASHINGTON
IDAHO
CALIFORNIA
NEVADA
Astoria
Rainier
Portland
Hood River
The Dalles
Biggs
Umatilla
Milton-Freewater
Ontario
O'Brien
Ashland
Klamath Falls
Lakeview
5
70
100
19
9
7
26
102
1
61
105
2
4
2

HAZARDOUS MATERIAL MOVEMENTS BY HOUR

7 SURVEY SITES OUTSIDE PORTLAND



OSTRANDER AND 3 OREGON PORTS-OF-ENTRY



MOVEMENTS BY TIME OF DAY

A distribution of hazardous material movements by time of day shows 60-70 percent of the vehicles surveyed arrived at the scale locations between 6 a.m. and 6 p.m.

In the first surveys at locations outside Portland, 70 percent of the vehicles arrived during this 12-hour period. The greatest number of trucks (38 percent) were observed between 8 a.m. and 12 p.m. In the latter surveys at Ostrander and the three ports-of-entry, 62 percent of the vehicles arrived at the scale between 6 a.m. and 6 p.m. At these four sites, the daily flow of placarded vehicles averaged a consistent 8 per hour between 7 a.m. and 12 midnight.

An analysis of specific hazardous material movements by time of day reveals certain commodities on the highway during daylight hours and others traveling at night. Movements of flammables and combustibles followed the pattern for all materials in general -- 70 percent moving in daylight hours (6 a.m. - 6 p.m.). Similar shipping hours were observed for vehicles transporting corrosives and nonflammable gases. ORM shipments and trucks carrying flammable gases were almost exclusively on the highway during daylight hours.

Conversely, 70 percent of surveyed movements placarded DANGEROUS (for their combination of hazardous materials) were observed between 6 p.m. and 6 a.m. Other placards often observed at night included FLAMMABLE SOLID, POISON and OXIDIZER. Shipments of explosives were equally divided between the 12-hour periods. Ten movements of radioactives, surveyed at Farewell Bend, entered Oregon between the hours of 4 p.m. and 6 a.m.

The time of movement is often related to the origin and destination of the hazardous material. A further examination of the number and type of shipments by time of day is included as part of each survey location's summary section.

PART II

COUNTY-BY-COUNTY SECTION

MOVEMENTS BY COUNTY AND CITY OF DESTINATION

The following section examines the movement of hazardous materials according to the destinations of the vehicles surveyed. The analysis is expected to be of particular interest to emergency response teams throughout the state. Based on the survey activity, information of the quantity and types of hazards moving in or through a region could be used to tailor training programs and enhance accident preparedness.

A guide to reading the county-by-county section follows explaining the illustrative page and the accompanying table. The pages detail the number and type of hazard-placarded vehicles destined for cities within a county, as well as hazards passing through the county. Emergency responders are interested in all vehicles traveling the area's highways when assessing their total exposure to hazardous material movements. The county-by-county section also details the most common commodities delivered within each county and the origin of those movements.

A GUIDE TO READING THE COUNTY-BY-COUNTY SECTION

COMMODITY AND SHIPMENT ANALYSIS

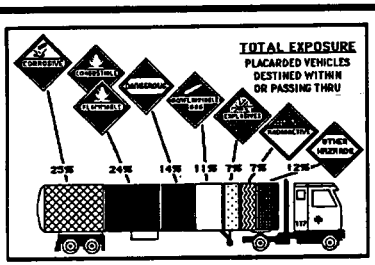
Common Commodities – A listing of the commodities most frequently found aboard vehicles serving the county.

Number of Shipments – Many surveyed vehicles were transporting more than one commodity. In counting the number of shipments, each different commodity aboard was considered a "shipment". With Baker County, for example, hazardous material surveys tracked 11 vehicles destined for the county with 20 total "shipments" aboard.

BAKER COUNTY

Common Commodities	ID No.	No. of Shipments
Gasoline	UN 1203	3
Paint	UN 1263	2
Fuel Oil, Diesel	NA 1993	1
Liquefied petroleum gas	UN 1075	1
Oxygen	UN 1072	1
Acetylene	UN 1001	1
17 Different Commodities Total		20 Total Shipments

Shipment Origin	No. of Vehicles	Common Hazard
Idaho	5	2 - Flammable Gas
Portland	3	2 - Corrosive
Ontario	2	Flammable
Springfield	1	Flammable
TOTAL SURVEYED VEHICLES DESTINED FOR BAKER COUNTY - 11		



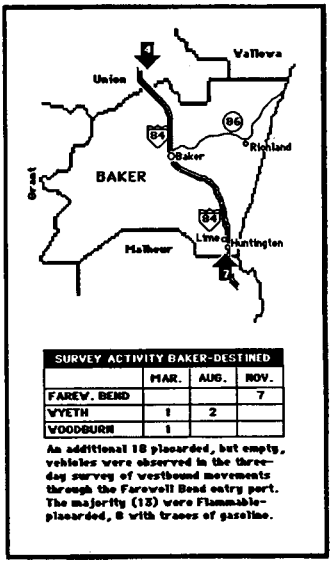
HAZ. MAT. MIX ON COUNTY'S HIGHWAYS

TOTAL EXPOSURE - To gauge the variety of hazardous materials transported on the highways of a particular county, the kind and number of vehicles actually serving the county were **combined** with those simply passing through to other destinations. The truck with segmented trailer represents the percentage mix of hazardous materials transported on the highways of the county, according to all on-highway survey activity. (See facing page and bottom line of table for actual numbers of each placarded vehicle)

COUNTY MAP

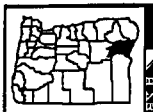
SURVEY ACTIVITY - The table below each county's map details which of the 11 survey locations tracked vehicles destined for cities within the county. Some on-highway surveys were conducted in March, and repeated in August, while others were conducted only in November.

Arrows indicate the point of entrance and initial direction of vehicles serving the county. Direction of traffic is often only the result of the location of on-highway survey activity, rather than the preferred routing of movements.



SURVEY ACTIVITY BAKER-DESTINED			
	MAR.	AUG.	NOV.
FAREW. BEND			7
WYETH	1	2	
WOODBURN	1		

An additional 18 placarded, but empty, vehicles were observed in the three-day survey of westbound movements through the Farewell Bend entry port. The majority (13) were Flammable-placarded, 8 with traces of gasoline.



BAKER

HAZARDOUS MATERIAL MOVEMENTS
According to County and City of Destination -- All On-Highway Surveys, 1987

BAKER	3		2		2			1			
HUNTINGTON	1										
LIME	2										
RICHLAND			1								
TOTAL STOPS WITHIN BAKER COUNTY	6		3		2			1			
PASSING THROUGH	30	4	1	17	35	5	1	20	10	5	10
TOTAL EXPOSURE	36	4	4	17	37	5	1	21	10	5	10

HAZARDOUS MATERIAL MOVEMENTS

Based on all on-highway survey activity, this table was constructed to detail the frequency of movements and types of hazards destined for cities within the county. Each time a shipping paper listed a city as its destination it was noted on the table under the particular hazard placard displayed on the vehicle. The numbers indicate the movement's general hazard, not the specific commodities aboard.

In Baker County, on-highway survey activity tracked 11 vehicles serving 4 communities. Most were destined for the city of Baker. The 11 vehicles made 12 total stops within the county. One of the movements, a truck placarded FLAMMABLE GAS, listed the city of Baker and the city of Richland as destinations on its shipping paper. As a result of movements with multiple destinations, the total numbers listed in the "TOTAL STOPS" row often exceed the actual number of surveyed trucks destined within the county.

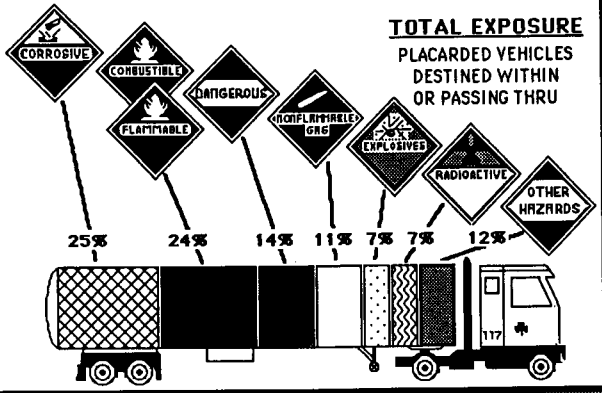
The row of numbers labeled "PASSING THROUGH" indicate the number of surveyed vehicles destined elsewhere, but traveling the highways of the county.

Adding the number of hazard-placarded vehicles destined within the county and the number of hazards passing thru the county equals the "TOTAL EXPOSURE" of a county. This row details the mixture of hazards traveling on the county's highways, according to all on-highway surveys.

BAKER COUNTY

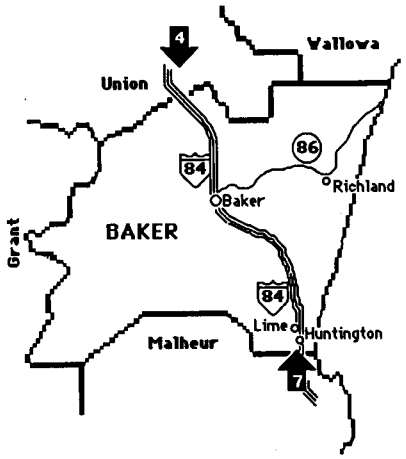
Common Commodities	ID No.	No. of Shipments
Gasoline	UN 1203	3
Paint	UN 1263	2
Fuel Oil, Diesel	NA 1993	1
Liquefied petroleum gas	UN 1075	1
Oxygen	UN 1072	1
Acetylene	UN 1001	1
17 Different Commodities Total		20 Total Shipments

Shipment Origin	No. of Vehicles	Common Hazard
Idaho	5	2 - Flammable Gas
Portland	3	2 - Corrosive
Ontario	2	Flammable
Springfield	1	Flammable
TOTAL SURVEYED VEHICLES DESTINED FOR BAKER COUNTY - 11		



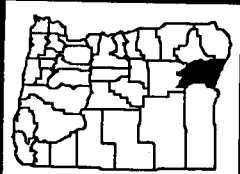
TOTAL EXPOSURE

PLACARDED VEHICLES DESTINED WITHIN OR PASSING THRU



SURVEY ACTIVITY BAKER-DESTINED			
	MAR.	AUG.	NOV.
FAREW. BEND			7
WYETH	1	2	
WOODBURN	1		

An additional 18 placarded, but empty, vehicles were observed in the three-day survey of westbound movements through the Farewell Bend entry port. The majority (13) were Flammable-placarded, 8 with traces of gasoline.



BAKER

HAZARDOUS MATERIAL MOVEMENTS

According to County and City of Destination -- All On-Highway Surveys, 1987

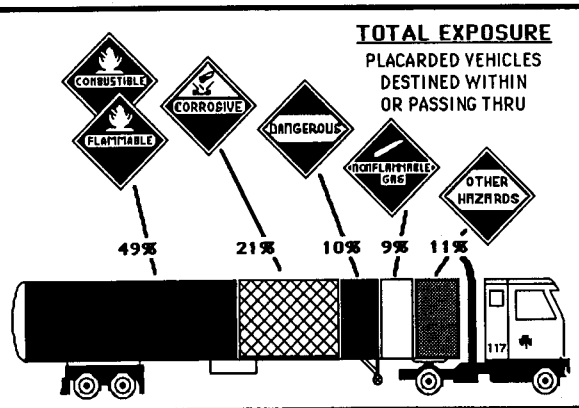
	COMBUSTIBLE / FLAMMABLE	FLAMMABLE SOLID	FLAMMABLE GAS	NON-FLAMM GAS	CORROSIVE	OXIDIZER	POISON	DANGEROUS	EXPLOSIVES	ORM	RADIOACTIVE
BAKER	3		2		2			1			
HUNTINGTON	1										
LIME	2										
RICHLAND			1								
TOTAL STOPS WITHIN BAKER COUNTY	6		3		2			1			
PASSING THROUGH	30	4	1	17	35	5	1	20	10	5	10
TOTAL EXPOSURE	36	4	4	17	37	5	1	21	10	5	10

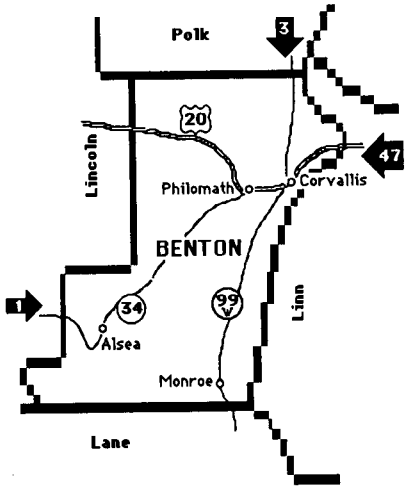
BENTON COUNTY

Common Commodities	ID No.	No. of Shipments
Gasoline	UN 1203	23
Fuel Oil, Diesel	NA 1993	6
Nitrogen, refrigerated liquid	UN 1977	6
Sulfuric acid	UN 1830	4
Corrosive liquid, n.o.s.	UN 1760	3
Sodium hydroxide, liquid	UN 1824	3
33 Different Commodities Total		78 Total Shipments

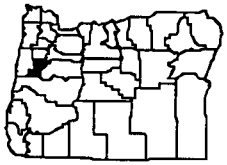
Shipment Origin	No. of Vehicles	Common Hazard
Portland	36	81% Flammable
Washington State	9	7 - Nonflammable Gas
California	4	2 - Dangerous
Illinois	1	Dangerous
St. Helens	1	Explosive

TOTAL SURVEYED VEHICLES DESTINED FOR BENTON COUNTY - 51





SURVEY ACTIVITY BENTON-DESTINED			
	MAR.	AUG.	NOV.
WOODBURN	21	19	
ASHLAND			4
DAYTON	2	1	
HUBBARD	2		
OSTRANDER		1	
KLAM. FALLS			1



BENTON

HAZARDOUS MATERIAL MOVEMENTS

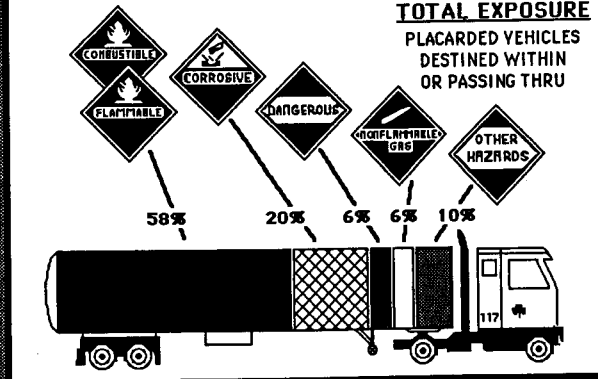
According to County and City of Destination -- All Surveys, 1987

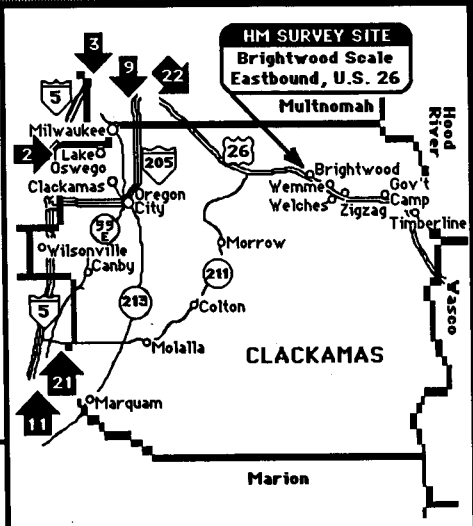
	COMBUSTIBLE / FLAMMABLE	NONFLAMMABLE GAS	CORROSIVE	OXIDIZER	DANGEROUS	EXPLOSIVES	ORM
ALSEA	1						
CORVALLIS	22	7	3	1	6	1	
PHILOMATH	7		1				1
MONROE				1			
TOTAL STOPS WITHIN BENTON COUNTY	30	7	4	2	6	1	1
PASSING THROUGH	9		13		2	1	4
TOTAL EXPOSURE	39	7	17	2	8	2	5

CLACKAMAS COUNTY

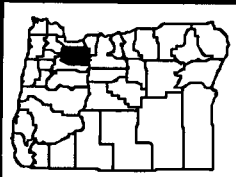
Common Commodities	ID No.	No. of Shipments
Gasoline	UN 1203	17
Fuel Oil, Diesel	NA 1993	15
Liquefied Petroleum Gas	UN 1075	12
Battery	UN 2794	4
Oxygen	UN 1072	4
Paint	UN 1263	3
39 Different Commodities Total		100 Total Shipments

Shipment Origin	No. of Vehicles	Common Hazard
Portland	26	73% Flammable
California	11	6 - Corrosive
Washington State	9	4 - Nonflammable Gas
Other Origins	22	45% Flammable
TOTAL SURVEYED VEHICLES DESTINED FOR CLACKAMAS COUNTY - 68		





SURVEY ACTIVITY CLACKA.-DESTINED	MAR.	AUG.	NOV.
BRIGHTWOOD	11	11	
HUBBARD	11	10	
ASHLAND			8
OSTRANDER		6	
WOODBURN	1	2	
KLAM. FALLS			3
DAYTON		2	
F.WELL BEND			2
WYETH	1		



CLACKAMAS

HAZARDOUS MATERIAL MOVEMENTS

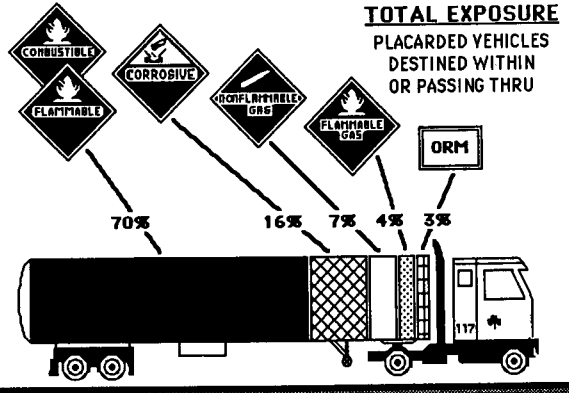
According to County and City of Destination -- All On-Highway Surveys, 1987

	COMBUSTIBLE / FLAMMABLE	FLAMMABLE SOLID	FLAMMABLE GAS	NON-FLAMM GAS	CORROSIVE	OXIDIZER	POISON	DANGEROUS	EXPLOSIVES	ORGANIC PEROXIDE	ORM
BRIGHTWOOD	4		1								
CANBY	6		3		3	1					
CLACKAMAS	1			2	2						
COLTON	1										
GOVT. CAMP	2		2								
LAKE OSWEGO	2			1							
MARQUAM	1										
MILWAUKEE	1	1	1	1	2						
MOLALLA	10		1	1							
MORROW	1										
OREGON CITY			1	1	1				1		
TIMBERLINE	2										
WELCHES/WEMME	3		5								
WILSONVILLE	1		1					1			
ZIGZAG	2										
TOTAL STOPS WITHIN CLACKAMAS COUNTY	37	1	15	6	8	1		1	1		
PASSING THROUGH	767	8	34	72	267	12	19	87	22	1	25
TOTAL EXPOSURE	804	9	49	78	275	13	19	88	23	1	25

CLATSOP COUNTY

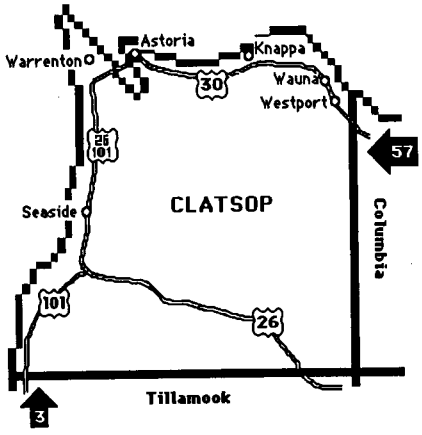
Common Commodities	ID No.	No. of Shipments
Gasoline	UN 1203	35
Fuel Oil, Diesel	NA 1993	5
Oxygen	UN 1072	4
Acetylene	UN 1001	3
Nitrogen	UN 1066	3
Sulfuric acid	UN 1830	3
27 Different Commodities Total		81 Total Shipments

Shipment Origin	No. of Vehicles	Common Hazard
Portland	52	83% Flammable
Washington State	7	6 - Corrosive
Columbia City	1	Nonflammable Gas
TOTAL SURVEYED VEHICLES DESTINED FOR CLATSOP COUNTY - 60		



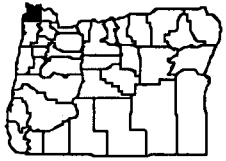
TOTAL EXPOSURE

PLACARDED VEHICLES DESTINED WITHIN OR PASSING THRU



SURVEY ACTIVITY CLATSOP-DESTINED			
	MAR.	AUG.	NOV.
SCAPPOOSE	22	32	
OSTRANDER		3	
TILLAMOOK	2		
DAYTON		1	

The August repeat of the three-day survey at the westbound Scappoose site exposed a 45% seasonal increase in shipments serving Clatsop County.



CLATSOP

HAZARDOUS MATERIAL MOVEMENTS

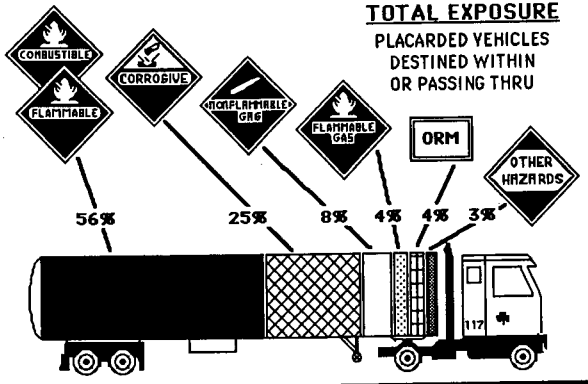
County and City of Destination -- 1987 Surveys

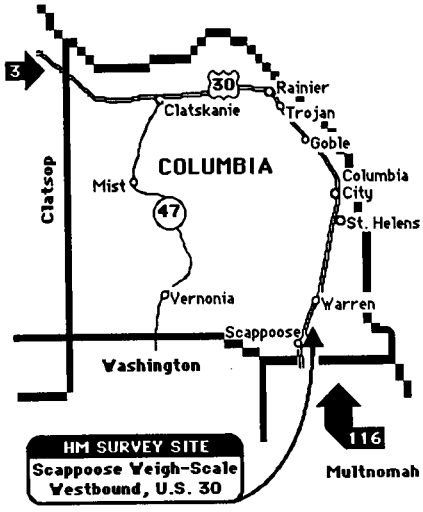
	COMBUSTIBLE / FLAMMABLE	FLAMMABLE GAS	NONFLAMMABLE GAS	CORROSIVE	ORM
ASTORIA	36	1	3	1	2
KNAPPA	1				
SEASIDE	3	1		2	
WARRENTON	1		1		
WAUNA		1		6	
WESTPORT	2				
TOTAL STOPS WITHIN CLATSOP COUNTY	43	3	4	9	2
PASSING THROUGH	6		1	2	
TOTAL EXPOSURE	49	3	5	11	2

COLUMBIA COUNTY

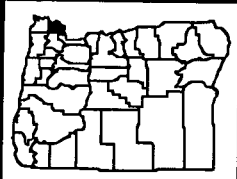
Common Commodities	ID No.	No. of Shipments
Gasoline	UN 1203	39
Sodium hydroxide, liquid	UN 1824	25
Fuel Oil, Diesel	NA 1993	16
Oxygen	UN 1072	9
Aluminum sulfate solution	NA 1760	6
Oxygen, refrigerated liquid	UN 1073	5
35 Different Commodities Total		154 Total Shipments

Shipment Origin	No. of Vehicles	Common Hazard
Portland	97	47% Flammable
Washington State	14	6 - ORM
California	1	Dangerous
Other Origins	7	
TOTAL SURVEYED VEHICLES DESTINED FOR COLUMBIA COUNTY - 119		





SURVEY ACTIVITY COLUM.-DESTINED	MAR.	AUG.	NOV.
SCAPPOOSE	58	56	
TILLAMOOK	1	1	
DAYTON		1	
OSTRANDER		1	
ASHLAND			1



COLUMBIA

HAZARDOUS MATERIAL MOVEMENTS

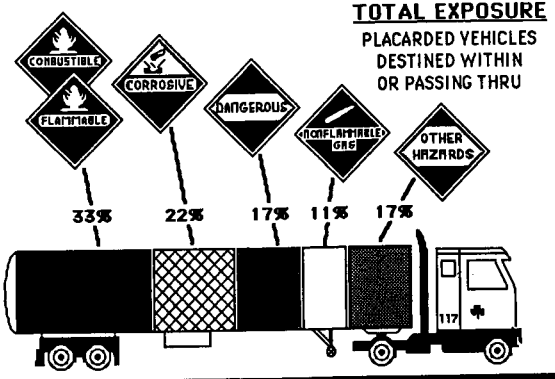
According to County and City of Destination -- All On-Highway Surveys, 1987

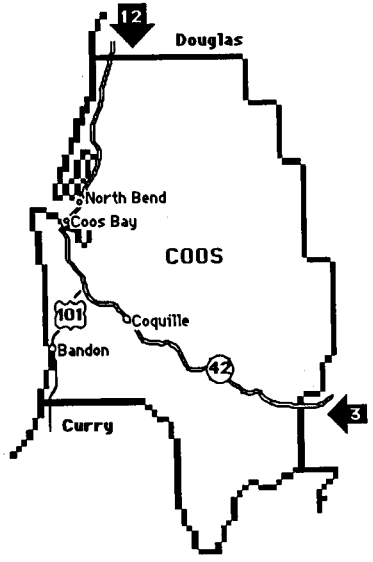
	COMBUSTIBLE / FLAMMABLE	FLAMMABLE GAS	NONFLAMMABLE GAS	CORROSIVE	OXIDIZER	DANGEROUS	EXPLOSIVES	ORM	RADIOACTIVE
CLATSKANIE	6		4	1					
COLUMBIA CITY				3					
GOBLE							1		
MIST						1			
RAINIER	12	1	2	2					
SCAPPOOSE	9	5	3	2					
ST. HELENS	18	5	3	35				8	
TROJAN	1		2						
VERNONIA	2								
WARREN	1								
TOTAL STOPS WITHIN COLUMBIA COUNTY	49	11	14	43		1	1	8	
PASSING THROUGH	102	1	7	23	1	1	3	2	1
TOTAL EXPOSURE	151	12	21	66	1	2	4	10	1

COOS COUNTY

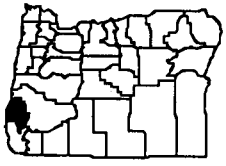
Common Commodities	ID No.	No. of Shipments
Fuel Oil, Diesel	NA 1993	2
Compound, cleaning, flamm. liq.	NA 1993	2
Battery	UN 2794	2
Paint	UN 1263	2
Combustible liquid, n.o.s.	NA 1993	1
Potassium, metal	UN 2257	1
26 Different Commodities Total		30 Total Shipments

Shipment Origin	No. of Vehicles	Common Hazard
Portland	10	5 - Flammable
Washington State	3	1 - Nonflammable Gas
California	2	1 - Dangerous
TOTAL SURVEYED VEHICLES DESTINED FOR COOS COUNTY - 15		





SURVEY ACTIVITY COOS-DESTINED			
	MAR.	AUG.	NOV.
WOODBURN	8	4	
ASHLAND			2
OSTRANDER		1	



COOS

HAZARDOUS MATERIAL MOVEMENTS

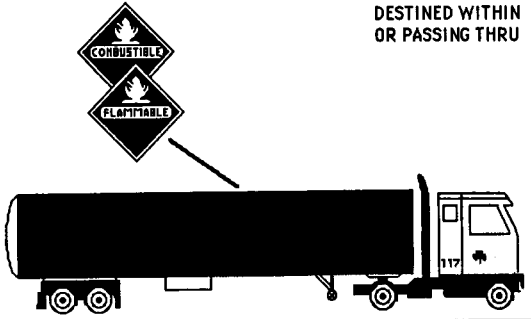
According to County and City of Destination -- All Surveys, 1987

	COMBUSTIBLE / FLAMMABLE	FLAMMABLE SOLID	FLAMMABLE GAS	NONFLAMMABLE GAS	CORROSIVE	DANGEROUS
BANDON			1			2
COOS BAY	1	1		1	1	
COQUILLE	1				1	
NORTH BEND	4			1	1	
TOTAL STOPS WITHIN COOS COUNTY	6	1	1	2	3	2
PASSING THROUGH		1			1	1
TOTAL EXPOSURE	6	2	1	2	4	3

CROOK COUNTY

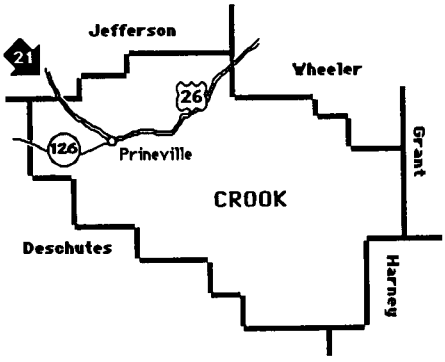
Common Commodities	ID No.	No. of Shipments
Fuel Oil, Diesel	NA 1993	15
Gasoline	UN 1203	7
2 Different Commodities Total		22 Total Shipments

Shipment Origin	No. of Vehicles	Common Hazard
Portland	19	Flammable
Albany	1	(Gasoline)
Astoria	1	(Diesel)
TOTAL SURVEYED VEHICLES DESTINED FOR CROOK COUNTY - 21		



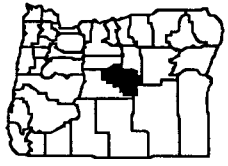
TOTAL EXPOSURE

PLACARDED VEHICLES DESTINED WITHIN OR PASSING THRU



SURVEY ACTIVITY CROOK-DESTINED			
	MAR.	AUG.	
BRIGHTWOOD	7	14	

The August repeat of the three-day survey at the eastbound Brightwood site exposed a 100% seasonal increase in shipments serving Crook County.



HAZARDOUS MATERIAL MOVEMENTS

County and City of Destination -- 1987 Surveys

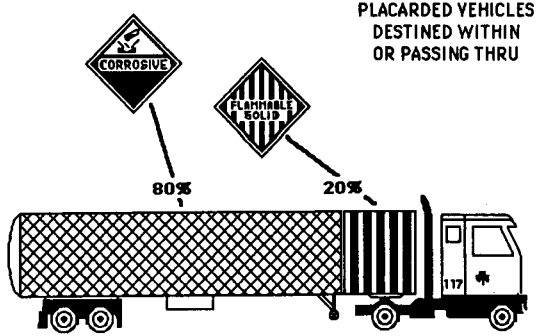
CROOK

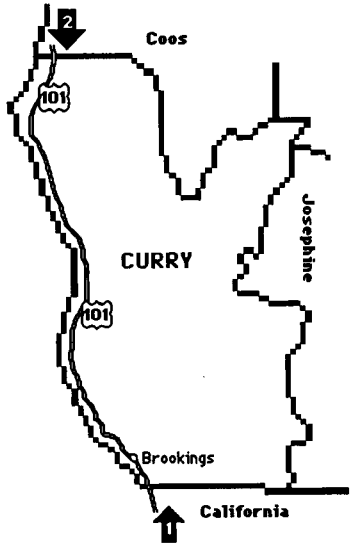
PRINEVILLE	21
TOTAL STOPS WITHIN CROOK COUNTY	21
PASSING THROUGH	4
TOTAL EXPOSURE	25

CURRY COUNTY

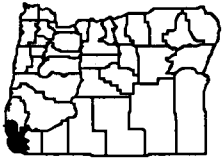
Common Commodities	ID No.	No. of Shipments
Sodium hydroxide, liquid	UN 1824	1
Battery	UN 2794	1
Potassium, metal	UN 2257	1
Phosphorus, yellow, dry	UN 1381	1
Bromine	UN 1744	1
Acetic acid, glacial	UN 2789	1
9 Different Commodities Total		9 Total Shipments

Shipment Origin	No. of Vehicles	Common Hazard
Portland	2	1 - Flammable Solid
California	1	Corrosive
TOTAL SURVEYED VEHICLES DESTINED FOR CURRY COUNTY - 3		





SURVEY ACTIVITY CURRY-DESTINED			
	MAR.	AUG.	NOV.
WOODBURN	1	1	
KLAMA. FALLS			1



CURRY

HAZARDOUS MATERIAL MOVEMENTS

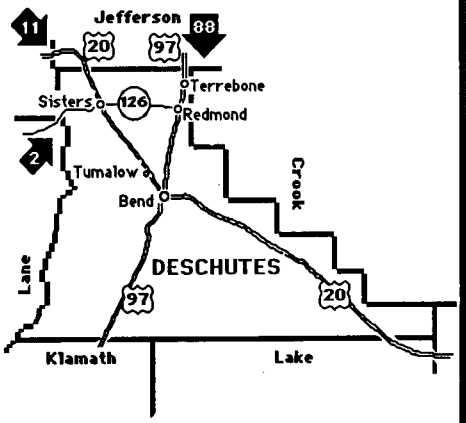
County and City of Destination -- 1987 Surveys

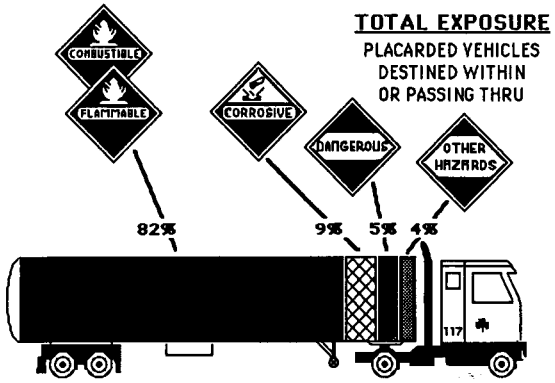
	FLAMMABLE SOLID	CORROSIVE
BROOKINGS	1	2
TOTAL STOPS WITHIN CURRY COUNTY	1	2
PASSING THROUGH		2
TOTAL EXPOSURE	1	4

DESCHUTES COUNTY

Common Commodities	ID No.	No. of Shipments
Gasoline	UN 1203	61
Fuel Oil, Diesel	NA 1993	28
Paint	UN 1263	6
Battery	NA 1993	3
Combustible, liquid, n.o.s.	UN 2794	2
Sulfuric acid	UN 1830	2
44 Different Commodities Total		152 Total Shipments

Shipment Origin	No. of Vehicles	Common Hazard
Portland	96	90% Flammable
Washington State	2	Nonflammable Gas
Clackamas	1	Corrosive
Other States	2	Dangerous
TOTAL SURVEYED VEHICLES DESTINED FOR DESCHUTES COUNTY - 101		



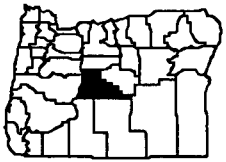


TOTAL EXPOSURE

PLACARDED VEHICLES DESTINED WITHIN OR PASSING THRU

SURVEY ACTIVITY DESCHUT.-DESTINED	MAR.	AUG.	NOV.
BRIGHTWOOD	34	52	
WOODBURN	6	5	
WYETH	1	1	
ASHLAND			2

The August repeat of the three-day survey at the eastbound Brightwood site exposed a 53% seasonal increase in shipments serving Deschutes County.



DESCHUTES

HAZARDOUS MATERIAL MOVEMENTS

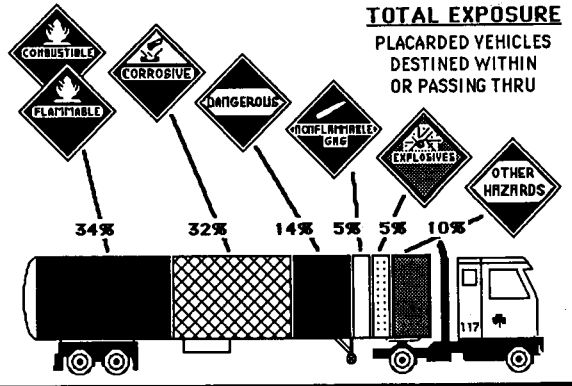
According to County and City of Destination -- All Surveys, 1987

	COMBUSTIBLE / FLAMMABLE	NONFLAMMABLE GAS	CORROSIVE	OXIDIZER	DANGEROUS	EXPLOSIVES	ORM
BEND	61	3	5		3		
REDMOND	20		3		3		
SISTERS	2						
TERREBONE	2						
TUMALOW	1						
TOTAL STOPS WITHIN DESCHUTES COUNTY	86	3	8		6		
PASSING THROUGH	41		6	1	2	1	1
TOTAL EXPOSURE	127	3	14	1	8	1	1

DOUGLAS COUNTY

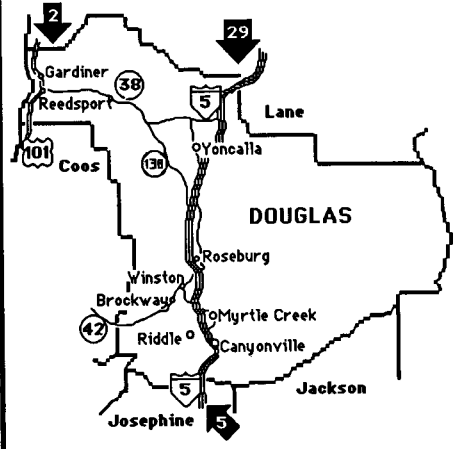
Common Commodities	ID No.	No. of Shipments
Sodium hydroxide, liquid	UN 1824	10
Fuel Oil, Diesel	NA 1993	8
Corrosive, liquid, n.o.s.	NA 1760	5
High explosives		3
Paint	UN 1263	2
Asphalt, cut back	NA 1999	2
22 Different Commodities Total		48 Total Shipments

Shipment Origin	No. of Vehicles	Common Hazard
Portland	24	50% Flammable
California	4	2 - Corrosive
Washington State	3	2 - Corrosive
Other Origins	5	2 - Explosive
TOTAL SURVEYED VEHICLES DESTINED FOR DOUGLAS COUNTY - 36		



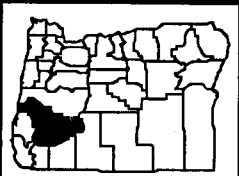
TOTAL EXPOSURE

PLACARDED VEHICLES DESTINED WITHIN OR PASSING THRU



SURVEY ACTIVITY DOUGLAS-DESTINED	MAR.	AUG.	NOV.
WOODBURN	9	17	
ASHLAND			5
OSTRANDER		3	
HUBBARD		1	
FAREW. BEND			1

The August repeat of the three-day survey at the southbound Woodburn site exposed an 89% seasonal increase in shipments serving Douglas County.



DOUGLAS

HAZARDOUS MATERIAL MOVEMENTS

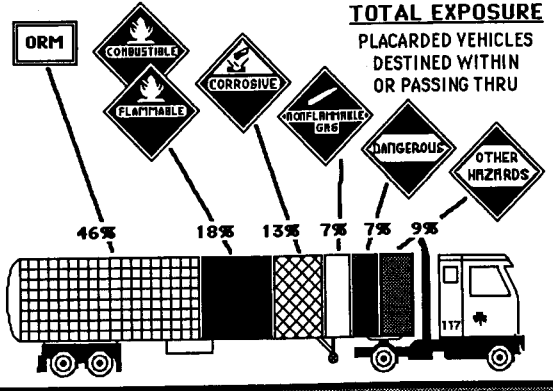
According to County and City of Destination -- All On-Highway Surveys, 1987

	COMBUSTIBLE / FLAMMABLE	FLAMMABLE SOLID	FLAMMABLE GAS	NON-FLAMM GAS	CORROSIVE	OXIDIZER	POISON	DANGEROUS	EXPLOSIVES	ORGANIC PEROXIDE	ORM
BROCKWAY									1		
CANYONVILLE	1										
GARDINER	5				10						
MYRTLE CREEK	1							1			
REEDSPORT					1						
RIDDLE					1						
ROSEBURG	5		1	1	2			2	2		1
WINSTON				1							
YONCALLA	1										
TOTAL STOPS WITHIN DOUGLAS COUNTY	13		1	2	14			3	3		1
PASSING THROUGH	128	6	10	20	118	4	13	56	16	1	8
TOTAL EXPOSURE	141	6	11	22	132	4	13	59	19	1	9

GILLIAM COUNTY

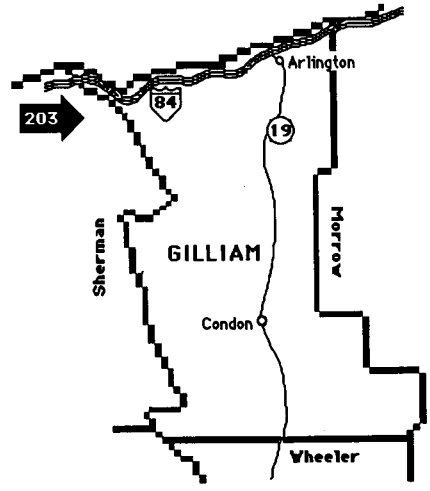
Common Commodities	ID No.	No. of Shipments
Hazardous waste, solid, n.o.s.	NA 9189	152
Hazardous waste, solid, n.o.s.	NA 9188	28
Hazardous waste, liquid, n.o.s.	NA 9189	19
Poison B, solid, n.o.s.	UN 2810	3
Gasoline	UN 1203	3
Waste sodium hydroxide, liquid	UN 1824	2
20 Different Commodities Total		219 Total Shipments

Shipment Origin	No. of Vehicles	Common Hazard
Washington State	186	97% ORM
Portland	12	6 - ORM
Other Origins	5	4 - ORM
TOTAL SURVEYED VEHICLES DESTINED FOR GILLIAM COUNTY - 203		



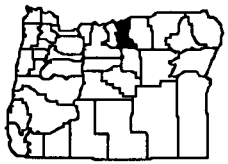
TOTAL EXPOSURE

PLACARDED VEHICLES DESTINED WITHIN OR PASSING THRU



SURVEY ACTIVITY GILLIAM-DESTINED			
	MAR.	AUG.	NOV.
WYETH	28	168	
OSTRANDER		5	
ASHLAND			1
FAREW. BEND			1

The unusual increase in shipments to Gilliam County, exposed in the August repeat of the three-day survey at the eastbound Wyeth site, is owing to the movement of hazardous waste from a summer-long "Superfund" cleanup in Washington State.



GILLIAM

HAZARDOUS MATERIAL MOVEMENTS

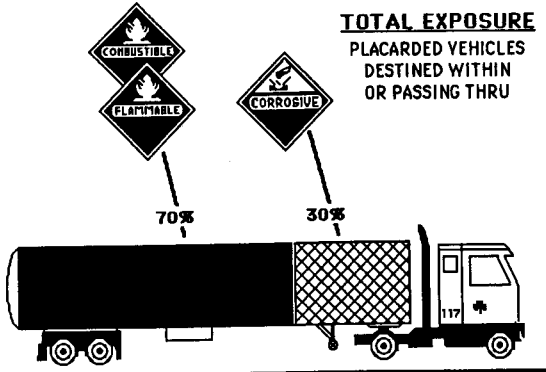
According to County and City of Destination -- All On-Highway Surveys, 1987

	COMBUSTIBLE / FLAMMABLE	FLAMMABLE SOLID	FLAMMABLE GAS	NONFLAMMABLE GAS	CORROSIVE	OXIDIZER	POISON	DANGEROUS	EXPLOSIVES	ORM
ARLINGTON	4				5		2	2		188
CONDON	2									
TOTAL STOPS WITHIN GILLIAM COUNTY	6				5		2	2		188
PASSING THROUGH	71	5	4	30	51	10	6	28	11	7
TOTAL EXPOSURE	77	5	4	30	56	10	8	30	11	195

GRANT COUNTY

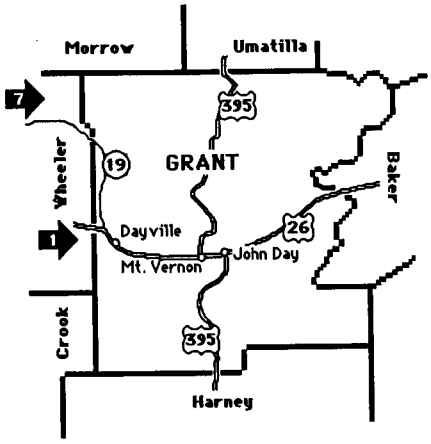
Common Commodities	ID No.	No. of Shipments
Asphalt, cut back	NA 1999	5
Gasoline	UN 1203	2
Battery	UN 2794	1
3 Different Commodities Total		8 Total Shipments

Shipment Origin	No. of Vehicles	Common Hazard
Portland	8	7 - Flammable
TOTAL SURVEYED VEHICLES DESTINED FOR GRANT COUNTY - 8		

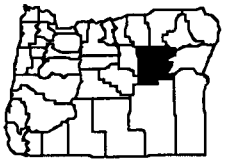


TOTAL EXPOSURE

PLACARDED VEHICLES DESTINED WITHIN OR PASSING THRU



SURVEY ACTIVITY LAKE-DESTINED			
	MAR.	AUG.	
WYETH	1	6	
BRIGHTWOOD		1	



GRANT

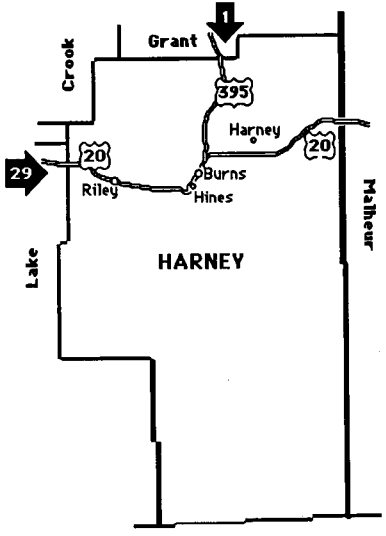
HAZARDOUS MATERIAL MOVEMENTS
County and City of Destination -- 1987 Surveys

DAYVILLE	1	
JOHN DAY	5	1
MT. VERNON	1	
TOTAL STOPS WITHIN GRANT COUNTY	7	1
PASSING THROUGH		2
TOTAL EXPOSURE	7	3

HARNEY COUNTY

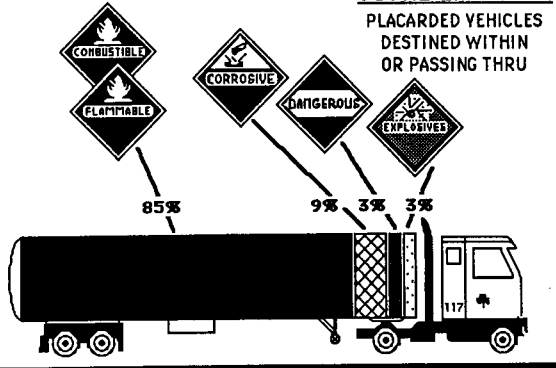
Common Commodities	ID No.	No. of Shipments
Combustible liquid, n.o.s.	NA 1993	22
Gasoline	UN 1203	6
Fuel Oil, Diesel	NA 1993	1
Battery	UN 2794	1
Alkaline	NA 1719	1
5 Different Commodities Total		31 Total Shipments

Shipment Origin	No. of Vehicles	Common Hazard
Portland	30	93% Flammable
TOTAL SURVEYED VEHICLES DESTINED FOR HARNEY COUNTY - 30		



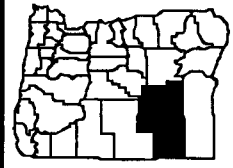
TOTAL EXPOSURE

PLACARDED VEHICLES DESTINED WITHIN OR PASSING THRU



SURVEY ACTIVITY HARNEY-DESTINED			
	MAR.	AUG.	
BRIGHTWOOD	2	16	
WOODBURN	1	10	
WYETH		1	

The significant August increase in shipments serving Harney County is owing to movements of combustible liquid, n.o.s., NA1993 (described as "asphalt" on many of the surveys).



HARNEY

HAZARDOUS MATERIAL MOVEMENTS

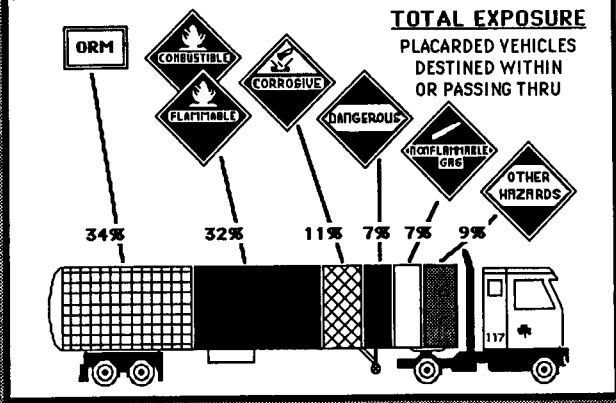
County and City of Destination -- 1987 Surveys

	COMBUSTIBLE / FLAMMABLE	CORROSIVE	DANGEROUS	EXPLOSIVES
BURNS	6	2		
HARNEY	1			
HINES	2			
RILEY	20			
TOTAL STOPS WITHIN HARNEY COUNTY	29	2		
PASSING THROUGH		1	1	1
TOTAL EXPOSURE	29	3	1	1

HOOD RIVER COUNTY

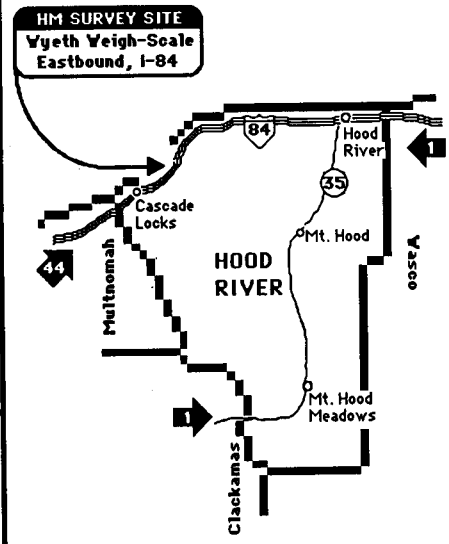
Common Commodities	ID No.	No. of Shipments
Gasoline	UN 1203	28
Fuel Oil, Diesel	NA 1993	11
High explosives		3
Detonators		2
Liquefied Petroleum Gas	UN 1075	2
Oxygen	UN 1073	2
16 Different Commodities Total		61 Total Shipments

Shipment Origin	No. of Vehicles	Common Hazard
Portland	36	89% Flammable
Washington State	2	
Other Origins	8	3 - Explosives
TOTAL SURVEYED VEHICLES DESTINED FOR HOOD RIVER COUNTY - 46		

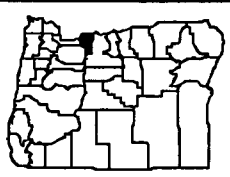


TOTAL EXPOSURE

PLACARDED VEHICLES DESTINED WITHIN OR PASSING THRU



SURVEY ACTIVITY H. RIVER-DESTINED	MAR.	AUG.	NOV.
WYETH	17	25	
WOODBURN		1	
BRIGHTWOOD	1		
ASHLAND			1
FAREW. BEND			1



HOOD RIVER

HAZARDOUS MATERIAL MOVEMENTS

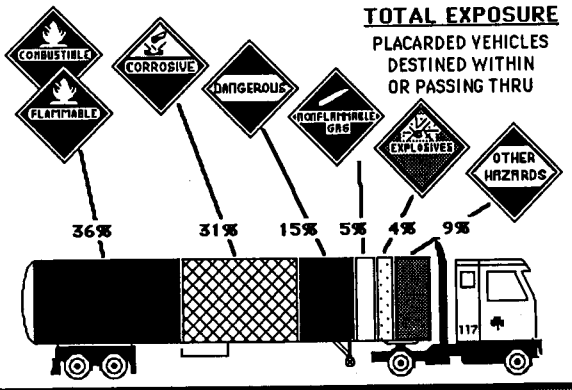
According to County and City of Destination -- All On-Highway Surveys, 1987

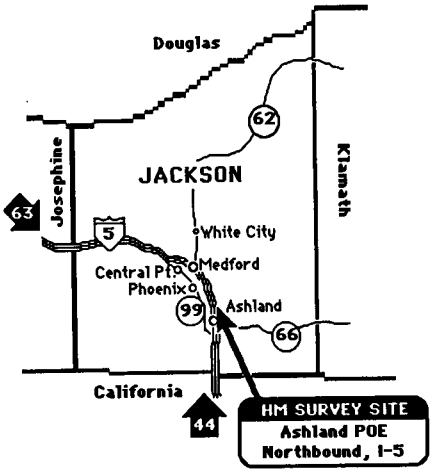
	NON-FLAMMABLE	FLAMMABLE SOLID	FLAMMABLE GAS	NON-FLAMM GAS	CORROSIVE	OXIDIZER	POISON	DANGEROUS	EXPLOSIVES	ORM	RADIOACTIVE
CASCADE LOCKS	2										
HOOD RIVER	34		3	3				1	3		
MT. HOOD											
MT. HOOD MEADOWS	1										
TOTAL STOPS WITHIN HOOD RIVER COUNTY	37		3	3				1	3		
PASSING THROUGH	148	5	10	36	63	10	7	41	11	193	1
TOTAL EXPOSURE	185	5	13	39	63	10	7	42	14	193	1

JACKSON COUNTY

Common Commodities	ID No.	No. of Shipments
Gasoline	UN 1203	29
Fuel Oil, Diesel	NA 1993	15
Paint	UN 1263	8
Sodium hydroxide, liquid	UN 1824	8
Battery	UN 2794	6
Methyl alcohol	UN 1230	6
57 Different Commodities Total		148 Total Shipments

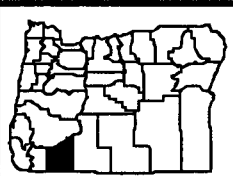
Shipment Origin	No. of Vehicles	Common Hazard
Portland	45	53% Flammable
California	42	81% Flammable
Washington State	11	3 - Corrosive
Other Origins	11	4 - Corrosive
TOTAL SURVEYED VEHICLES DESTINED FOR JACKSON COUNTY - 109		





SURVEY ACTIVITY JACKSON-DESTINED	MAR.	AUG.	NOV.
WOODBURN	24	35	
ASHLAND			47
HUBBARD	1	1	
KLAMA. FALLS			1

The August repeat of the three-day survey at the southbound Woodburn site exposed a 46% seasonal increase in shipments serving Jackson County.



JACKSON

HAZARDOUS MATERIAL MOVEMENTS

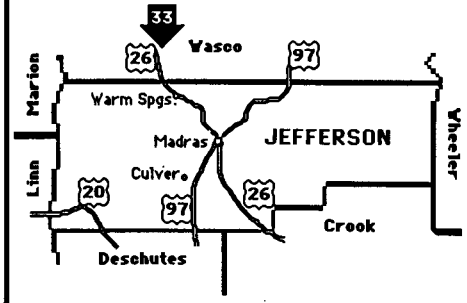
According to County and City of Destination -- All On-Highway Surveys, 1987

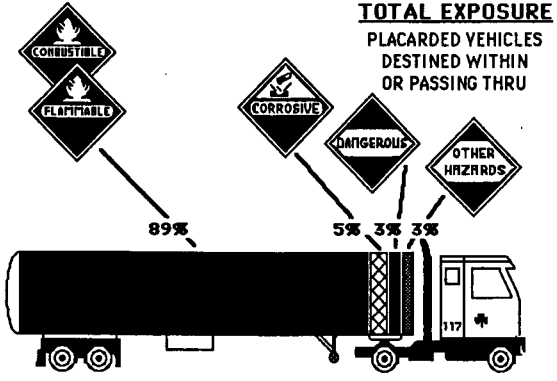
	COMBUSTIBLE / FLAMMABLE	FLAMMABLE SOLID	FLAMMABLE GAS	NON-FLAMM GAS	CORROSIVE	OXIDIZER	POISON	DANGEROUS	EXPLOSIVES	ORGANIC PEROXIDE	ORM
ASHLAND	2			1	2				1		
CENTRAL POINT	3				1						
MEDFORD	43		3	5	14	1		8	1		3
PHOENIX	4										
WHITE CITY	11			1	4		2	2			
TOTAL STOPS WITHIN JACKSON COUNTY	63		3	7	21	1	2	10	2		3
PASSING THROUGH	90	4	7	13	109	2	11	52	16	1	5
TOTAL EXPOSURE	153	4	10	20	130	3	13	62	18	1	8

JEFFERSON COUNTY

Common Commodities	ID No.	No. of Shipments
Gasoline	UN 1203	24
Fuel Oil, Diesel	NA 1993	12
Acetone	UN 1090	1
Resin solution	UN 1866	1
Methyl ethyl ketone peroxide	UN 2550	1
5 Different Commodities Total		40 Total Shipments

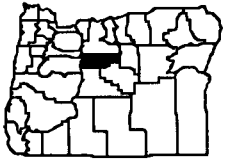
Shipment Origin	No. of Vehicles	Common Hazard
Portland	33	Flammable
TOTAL SURVEYED VEHICLES DESTINED FOR JEFFERSON COUNTY - 33		





SURVEY ACTIVITY JEFFER.-DESTINED			
	MAR.	AUG.	
BRIGHTWOOD	11	22	

The August repeat of the three-day survey at the eastbound Brightwood site exposed a 100% seasonal increase in shipments serving Jefferson County.



JEFFERSON

HAZARDOUS MATERIAL MOVEMENTS

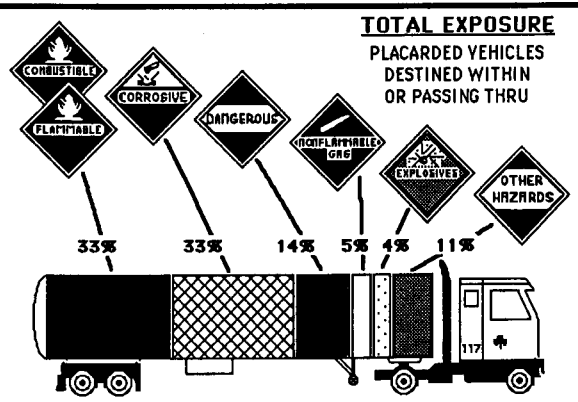
According to County and City of Destination -- All Surveys, 1987

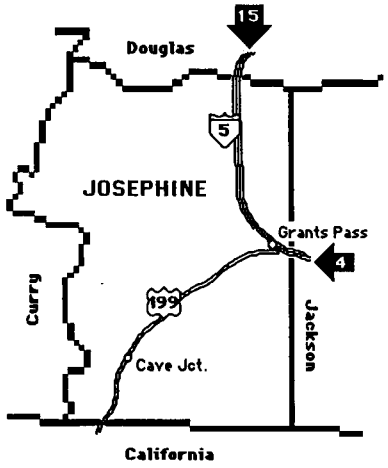
	COMBUSTIBLE / FLAMMABLE	NONFLAMMABLE GAS	CORROSIVE	DANGEROUS	EXPLOSIVES	OXIDIZER	ORM
CULVER	4						
MADRAS	27						
WARM SPRINGS	1						
TOTAL STOPS WITHIN JEFFERSON COUNTY	32						
PASSING THROUGH	145	3	9	6	1	1	1
TOTAL EXPOSURE	177	3	9	6	1	1	1

JOSEPHINE COUNTY

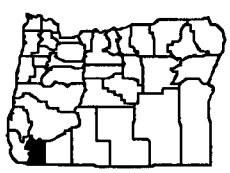
Common Commodities	ID No.	No. of Shipments
Paint	UN 1263	5
Gasoline	UN 1203	4
Paint Related Material	NA 1263	3
Battery	UN 2794	3
Driers, paint, liquid	UN 1168	2
Compound, cleaning, liquid	NA 1760	2
16 Different Commodities Total		30 Total Shipments

Shipment Origin	No. of Vehicles	Common Hazard
Portland	12	75% Flammable
Washington State	3	2 - Flammable
California	3	2 - Corrosive
Clackamas	1	Corrosive
TOTAL SURVEYED VEHICLES DESTINED FOR JOSEPHINE COUNTY - 19		





SURVEY ACTIVITY JOSEPH.-DESTINED			
	MAR.	AUG.	NOV.
WOODBURN	4	9	
ASHLAND			3
OSTRANDER		2	
KLAM. FALLS			1



JOSEPHINE

HAZARDOUS MATERIAL MOVEMENTS

According to County and City of Destination -- All On-Highway Surveys, 1987

	COMBUSTIBLE / FLAMMABLE	FLAMMABLE SOLID	FLAMMABLE GAS	NON-FLAMM GAS	CORROSIVE	OXIDIZER	POISON	DANGEROUS	EXPLOSIVES	ORGANIC PEROXIDE	ORM
GRANTS PASS	12				5						1
CAVE JUNCTION					1						
TOTAL STOPS WITHIN JOSEPHINE COUNTY	12				6						1
PASSING THROUGH	114	5	9	18	119	4	13	56	17	1	8
TOTAL EXPOSURE	126	5	9	18	125	4	13	56	17	1	9

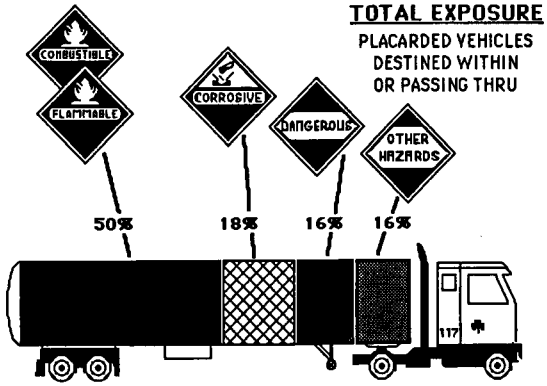
KLAMATH COUNTY

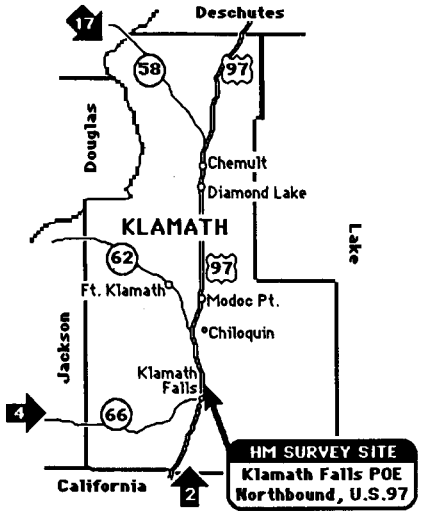
Common Commodities	ID No.	No. of Shipments
Gasoline	UN 1203	8
Fuel Oil, Diesel	NA 1993	6
Paint	UN 1263	3
Battery	UN 2794	3
Liquefied Petroleum Gas	UN 1075	2
Oxygen	UN 1072	2
27 Different Commodities Total		48 Total Shipments

Shipment Origin	No. of Vehicles	Common Hazard
Portland	14	71% Flammable
Klamath Falls	8	50% Flammable
California	4	2 - Dangerous
Washington State	3	2 - Corrosive
Other Origins	2	
TOTAL SURVEYED VEHICLES DESTINED FOR KLAMATH COUNTY - 31		

TOTAL EXPOSURE

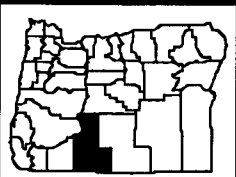
PLACARDED VEHICLES DESTINED WITHIN OR PASSING THRU





SURVEY ACTIVITY KLAMATH-DESTINED	MAR.	AUG.	NOV.
WOODBURN	7	8	
KLAMA. FALLS			11
OSTRANDER		3	
ASHLAND			2

An additional 28 Flammable-placarded, but empty, tankers were observed in the three-day survey of northbound movements through the Klamath Falls entry port. The vehicles were all destined for the Eugene pipeline terminus.



KLAMATH

HAZARDOUS MATERIAL MOVEMENTS

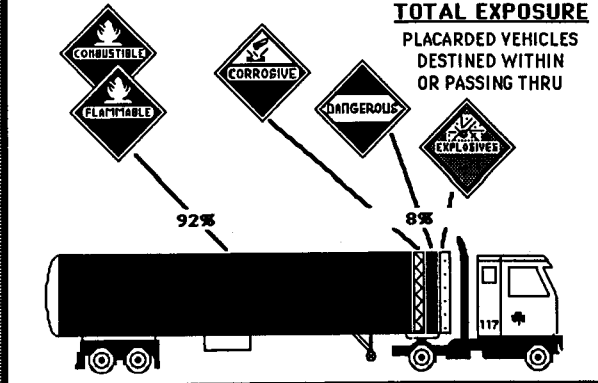
According to County and City of Destination -- All On-Highway Surveys, 1987

	COMBUSTIBLE / FLAMMABLE	FLAMMABLE SOLID	FLAMMABLE GAS	NONFLAMMABLE GAS	CORROSIVE	OXIDIZER	DANGEROUS	EXPLOSIVES	ORGANIC PEROXIDE	ORM
CHEMULT	3									
CHILOQUIN	1									
DIAMOND LAKE			2							
FT. KLAMATH	2			1						
KLAMATH FALLS	9				5		4			
MODOC POINT				1						
TOTAL STOPS WITHIN KLAMATH COUNTY	15		2	2	5		4			
PASSING THROUGH	19	1	1	1	7	1	7	1	1	1
TOTAL EXPOSURE	34	1	3	3	12	1	11	1	1	1

LAKE COUNTY

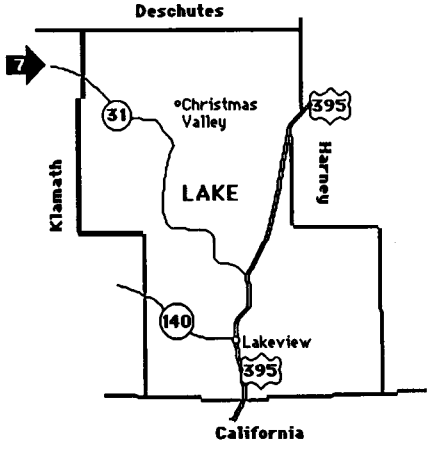
Common Commodities	ID No.	No. of Shipments
Combustible liquid, n.o.s.	NA 1993	4
Flammable liquid, n.o.s.	UN 1993	2
Gasoline	UN 1203	1
Fuel Oil, Diesel	NA 1993	1
4 Different Commodities Total		8 Total Shipments

Shipment Origin	No. of Vehicles	Common Hazard
Portland	7	Flammable
TOTAL SURVEYED VEHICLES DESTINED FOR LAKE COUNTY - 7		

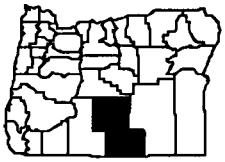


TOTAL EXPOSURE

PLACARDED VEHICLES DESTINED WITHIN OR PASSING THRU



SURVEY ACTIVITY LAKE-DESTINED			
	MAR.	AUG.	
BRIGHTWOOD	1	5	
HUBBARD		1	



LAKE

HAZARDOUS MATERIAL MOVEMENTS

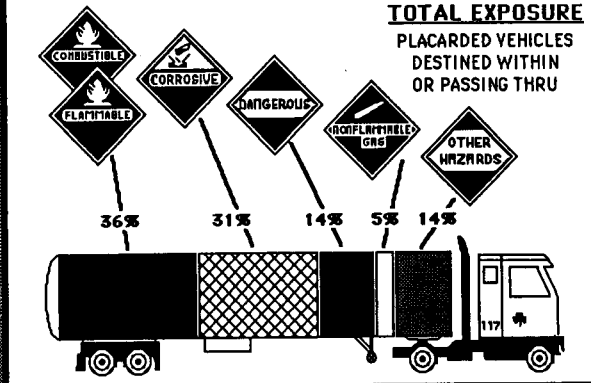
County and City of Destination -- 1987 Surveys

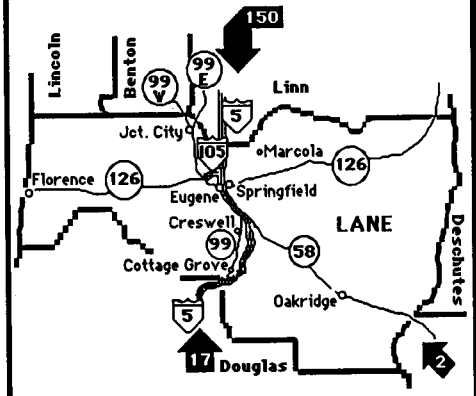
	COMBUSTIBLE / FLAMMABLE	CORROSIVE	DANGEROUS	EXPLOSIVES
LAKEVIEW	6			
CHRISTMAS VALLEY	1			
TOTAL STOPS WITHIN LAKE COUNTY	7			
PASSING THROUGH	28	1	1	1
TOTAL EXPOSURE	35	1	1	1

LANE COUNTY

Common Commodities	ID No.	No. of Shipments
Sodium hydroxide, liquid	UN 1824	33
Gasoline	UN 1203	13
Fuel Oil, Diesel	NA 1993	12
Formaldehyde solution	UN 2209	12
Paint	UN 1263	12
Battery	UN 2794	9
88 Different Commodities Total		279 Total Shipments

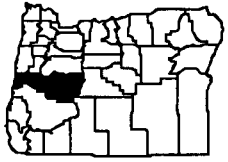
Shipment Origin	No. of Vehicles	Common Hazard
Portland	90	43% Flammable
Washington State	44	41% Corrosive
California	15	60% Dangerous
Other States	7	3 - Corrosive
Other Origins	13	
TOTAL SURVEYED VEHICLES DESTINED FOR LANE COUNTY - 169		





SURVEY ACTIVITY LANE-DESTINED			
	MAR.	AUG.	NOV.
WOODBURN	73	66	
ASHLAND			17
OSTRANDER		7	
DAYTON	2		
KLAM. FALLS			2
HUBBARD	1		
FAREW. BEND			1

The August repeat of the 3-day survey at the southbound Woodburn entry port exposed a 10% decrease in shipments serving Lane County, from an average of 24 vehicles per day to 22.



LANE

HAZARDOUS MATERIAL MOVEMENTS

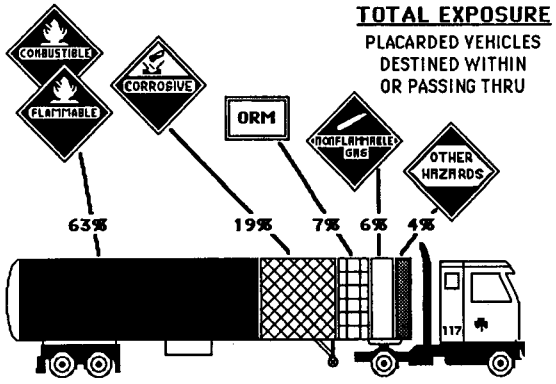
According to County and City of Destination -- All On-Highway Surveys, 1987

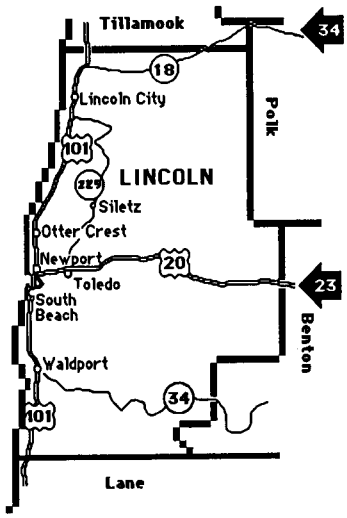
	COMBUSTIBLE / FLAMMABLE	FLAMMABLE SOLID	FLAMMABLE GAS	NON-FLAMM GAS	CORROSIVE	OXIDIZER	POISON	DANGEROUS	EXPLOSIVES	ORGANIC PEROXIDE	ORM
COTTAGE GROVE	4				1			1			
CRESWELL	1			3							
EUGENE	32		7	7	21	1	3	21			2
FLORENCE	1				1						
JUNCTION CITY				1	2			1			
MARCOLA								1			
OAKRIDGE	2										
SPRINGFIELD	23		2		31		2	3			6
TOTAL STOPS WITHIN LANE COUNTY	63		9	11	56	1	5	27			8
PASSING THROUGH	156	7	11	20	133	4	13	61	18	1	11
TOTAL EXPOSURE	219	7	20	31	189	5	18	88	18	1	19

LINCOLN COUNTY

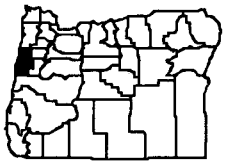
Common Commodities	ID No.	No. of Shipments
Gasoline	UN 1203	23
Fuel Oil, Diesel	NA 1993	14
Sodium hydroxide, liquid	UN 1824	8
Aluminum sulfate solution	NA 1760	5
Sulfuric acid	UN 1830	3
Combustible liquid, n.o.s.	NA 1993	3
14 Different Commodities Total		63 Total Shipments

Shipment Origin	No. of Vehicles	Common Hazard
Portland	52	69% Flammable
Washington State	3	
Oregon City	1	Poison
California	1	Corrosive
TOTAL SURVEYED VEHICLES DESTINED FOR LINCOLN COUNTY - 57		





SURVEY ACTIVITY LINCOLN-DESTINED	MAR.	AUG.	NOV.
DAYTON	14	18	
WOODBURN	8	15	
HUBBARD		1	
ASHLAND			1



LINCOLN

HAZARDOUS MATERIAL MOVEMENTS

According to County and City of Destination -- All Surveys, 1987

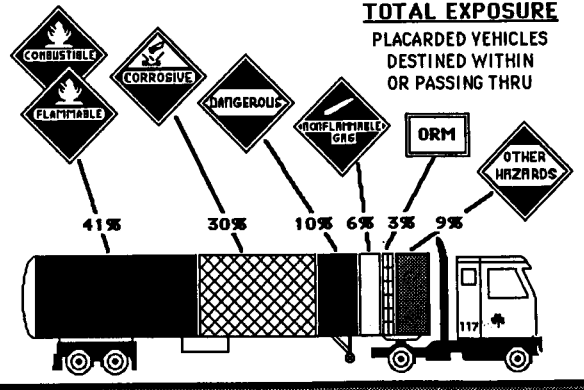
	COMBUSTIBLE / FLAMMABLE	FLAMMABLE GAS	NONFLAMMABLE GAS	CORROSIVE	POISON	EXPLOSIVES	ORM
LINCOLN CITY	19				1		
NEWPORT	11	1		1			1
OTTER CREST			1				
SILETZ	1						
SOUTH BEACH			1				
TOLEDO	8			11			4
WALDPORT	2		1				
TOTAL STOPS WITHIN LINCOLN COUNTY	41	1	3	12	1		5
PASSING THROUGH	2		1	1		1	
TOTAL EXPOSURE	43	1	4	13	1	1	5

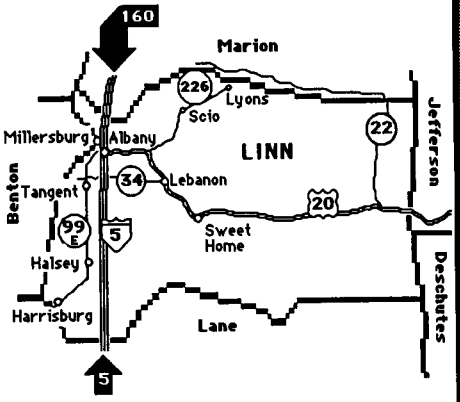
LINN COUNTY

Common Commodities	ID No.	No. of Shipments
Gasoline	UN 1203	37
Sodium hydroxide, liquid	UN 1824	29
Corrosive liquid, n.o.s.	UN 1760	26
Fuel Oil, Diesel	NA 1993	26
Methyl alcohol	UN 1230	21
Helium	UN 1046	7
47 Different Commodities Total		226 Total Shipments

Shipment Origin	No. of Vehicles	Common Hazard
Portland	103	61% Flammable
Washington State	52	75% Corrosive
California	3	2 - Dangerous
Other States	3	
Other Origins	4	2 - Flammable Gas

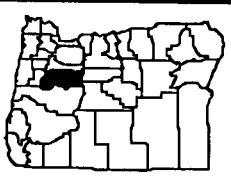
TOTAL SURVEYED VEHICLES DESTINED FOR LINN COUNTY - 165





SURVEY ACTIVITY LINN-DESTINED			
	MAR.	AUG.	NOV.
WOODBURN	48	108	
ASHLAND			4
HUBBARD	1	1	
DAYTON	1		
OSTRANDER		1	
KLAM. FALLS			1

The August repeat of the 3-day survey at the southbound Woodburn entry port exposed a 125% seasonal increase in shipments serving Linn County, from an average of 16 per day to 36.



LINN

HAZARDOUS MATERIAL MOVEMENTS

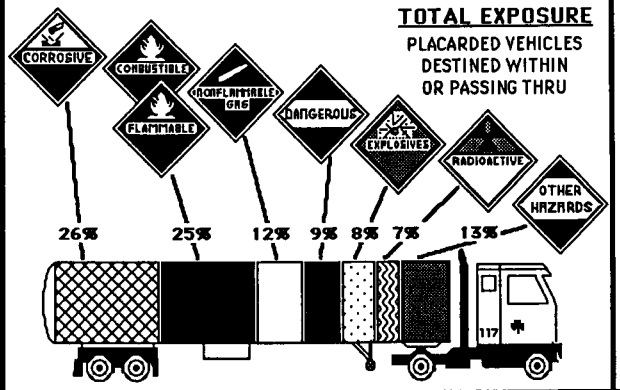
According to County and City of Destination -- All On-Highway Surveys, 1987

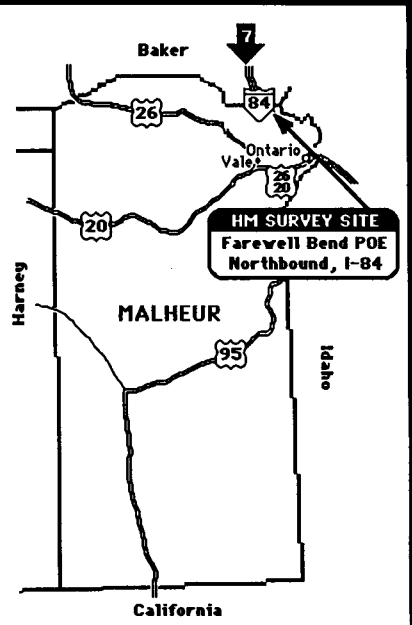
	COMBUSTIBLE / FLAMMABLE	FLAMMABLE SOLID	FLAMMABLE GAS	NON-FLAMM GAS	CORROSIVE	OXIDIZER	POISON	DANGEROUS	EXPLOSIVES	ORGANIC PEROXIDE	ORM
ALBANY	63	1	2	9	13	1		5			4
HALSEY	1			2	41						
HARRISBURG	1							1			
LEBANON	4			1	2						1
LYONS	3							1			
MILLERSBURG	1			1	1						
SCIO	1										
SWEET HOME	5		1		1						
TANGENT	4				1		1				
TOTAL STOPS WITHIN LINN COUNTY	83	1	3	13	59	1	1	7			5
PASSING THROUGH	260	8	19	34	193	7	15	77	20	1	23
TOTAL EXPOSURE	343	9	22	47	252	8	16	84	20	1	28

MALHEUR COUNTY

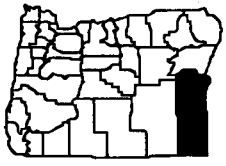
Common Commodities	ID No.	No. of Shipments
Battery	UN 2794	3
7 Different Commodities Total		9 Total Shipments

Shipment Origin	No. of Vehicles	Common Hazard
Portland	5	
Clackamas	1	Corrosive
Salem	1	Oxidizer
TOTAL SURVEYED VEHICLES DESTINED FOR MALHEUR COUNTY - 7		





SURVEY ACTIVITY MALHEUR-DESTINED			
	MAR.	AUG.	
WYETH	6	1	



MALHEUR

HAZARDOUS MATERIAL MOVEMENTS

According to County and City of Destination -- All On-Highway Surveys, 1987

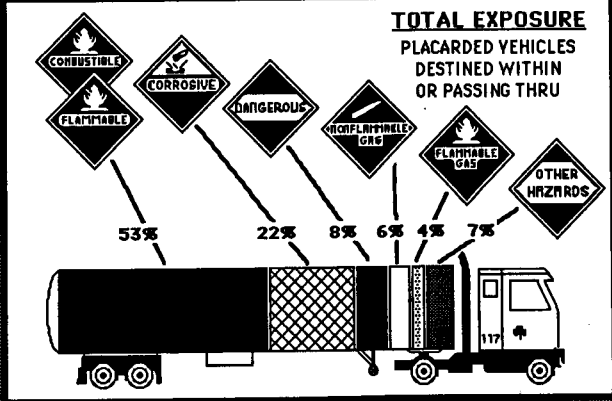
	COMBUSTIBLE / FLAMMABLE	FLAMMABLE SOLID	FLAMMABLE GAS	NON-FLAMM GAS	CORROSIVE	OXIDIZER	POISON	DANGEROUS	EXPLOSIVES	ORM	RADIOACTIVE
ONTARIO	1				3	1		1			
YALE		1									
TOTAL STOPS WITHIN MALHEUR COUNTY	1	1			3	1		1			
PASSING THROUGH	34	4	3	17	34	4	1	12	11	5	10
TOTAL EXPOSURE	35	5	3	17	37	5	1	13	11	5	10

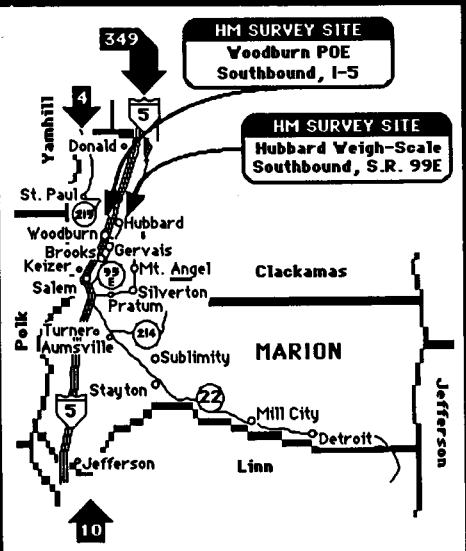
MARION COUNTY

Common Commodities	ID No.	No. of Shipments
Gasoline	UN 1203	167
Fuel Oil, Diesel	NA 1993	78
Oxygen	UN 1072	12
Oxygen, refrigerated liquid	UN 1073	12
Paint	UN 1263	10
Paint Related Material	NA 1263	6
75 Different Commodities Total		513 Total Shipments

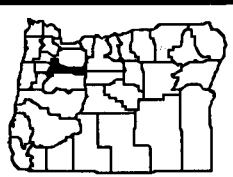
Shipment Origin	No. of Vehicles	Common Hazard
Portland	283	88% Flammable
Washington State	44	43% Nonflammable Gas
California	10	40% Flammable
Other States	4	3 - Corrosive
Other Origins	22	32% Flammable Gas

TOTAL SURVEYED VEHICLES DESTINED FOR MARION COUNTY - 363





SURVEY ACTIVITY MARION-DESTINED			
	MAR.	AUG.	NOV.
WOODBURN	129	137	
HUBBARD	30	35	
OSTRANDER		12	
ASHLAND			10
DAYTON	5	1	
F.WELL BEND			2
WYETH	1	1	



MARION

HAZARDOUS MATERIAL MOVEMENTS

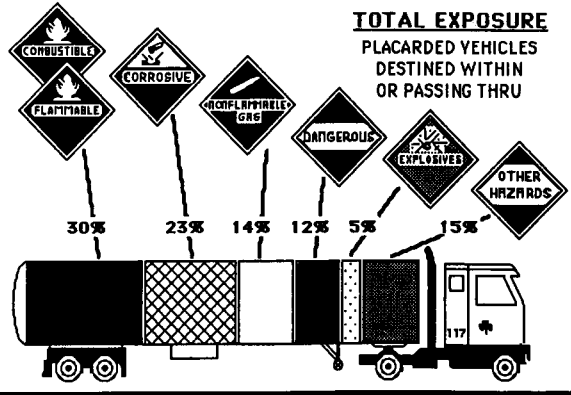
According to County and City of Destination -- All On-Highway Surveys, 1987

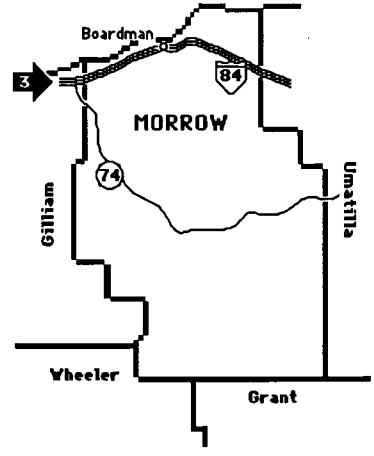
	COMBUSTIBLE / FLAMMABLE	FLAMMABLE SOLID	FLAMMABLE GAS	NON-FLAMM GAS	CORROSIVE	OXIDIZER	POISON	DANGEROUS	EXPLOSIVES	ORGANIC PEROXIDE	ORM
AUMSVILLE								1			
BROOKS	14							1			
DETROIT											
DONALD			1								
GERVAIS	2										
HUBBARD	1		2	1		1					
JEFFERSON								1			
MILL CITY	4										
MT. ANGEL	18		1	1	1			4			
PRATUM	3					1					
SALEM/KEIZER	170	2	11	21	18	2	3	13			
SILVERTON	1		1	2				1			
ST. PAUL			3		1						
STAYTON/W. STAYTON	24		1								
SUBLIMITY	3										
TURNER	4										
WOODBURN	35		4	6							
TOTAL STOPS WITHIN MARION COUNTY	279	2	24	31	20	4	3	21			
PASSING THROUGH	363	9	27	44	253	10	17	80	21	1	25
TOTAL EXPOSURE	642	11	51	75	273	14	20	101	21	1	25

MORROW COUNTY

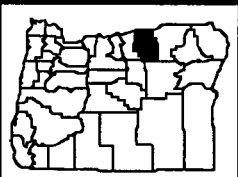
Common Commodities	ID No.	No. of Shipments
Gasoline	UN 1203	3
1 Commodity		3 Total Shipments

Shipment Origin	No. of Vehicles	Common Hazard
Portland	3	Flammable
TOTAL SURVEYED VEHICLES DESTINED FOR MORROW COUNTY - 3		





SURVEY ACTIVITY MORROW-DESTINED			
	MAR.	AUG.	
WYETH	1	2	



MORROW

HAZARDOUS MATERIAL MOVEMENTS

According to County and City of Destination -- All On-Highway Surveys, 1987

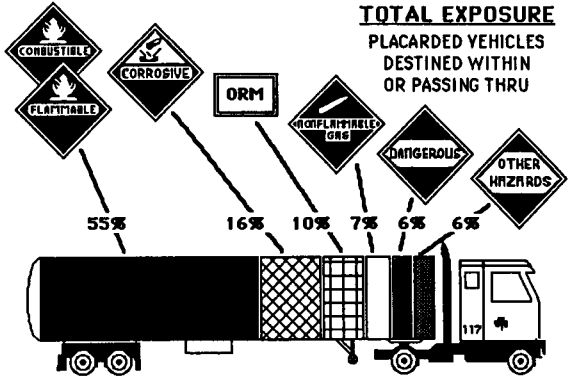
	COMBUSTIBLE / FLAMMABLE	FLAMMABLE SOLID	FLAMMABLE GAS	NON-FLAMM GAS	CORROSIVE	OXIDIZER	POISON	DANGEROUS	EXPLOSIVES	ORM	RADIOACTIVE
BOARDMAN	3										
TOTAL STOPS WITHIN MORROW COUNTY	3										
PASSING THROUGH	62	5	4	30	50	10	6	26	11	7	1
TOTAL EXPOSURE	65	5	4	30	50	10	6	26	11	7	1

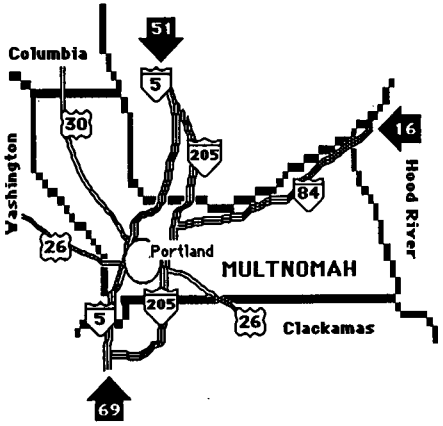
MULTNOMAH COUNTY

Common Commodities	ID No.	No. of Shipments
Paint	UN 1263	19
Paint Related Material	NA 1263	9
Corrosive Liquid, N.O.S.	UN 1760	11
Compound, Cleaning, Liquid	NA 1760	7
Oxygen, refrigerated liquid	UN 1073	5
Nitrogen, refrigerated liquid	UN 1977	4
90 Different Commodities Total		249 Total Shipments

Shipment Origin	No. of Vehicles	Common Hazard
California	65	34% Flammable
Washington	51	51% Flammable
Idaho	3	Dangerous
Other States	14	36% Flammable
Other Origins	7	

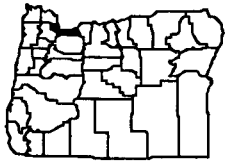
TOTAL SURVEYED VEHICLES DESTINED FOR MULTNOMAH COUNTY - 140





SURVEY ACTIVITY MULTNO-DESTINED			
	MAR.	AUG.	NOV.
ASHLAND			64
OSTRANDER			49
F.WELL BEND			14
WYETH	2	3	
SCAPPOOSE	3		
WOODBURN		2	
KLAM. FALLS			2
HUBBARD	1		

The number of shipments destined for Multnomah County is limited by the location of survey sites.



MULTNOMAH

HAZARDOUS MATERIAL MOVEMENTS

According to County and City of Destination -- All On-Highway Surveys, 1987

	COMBUSTIBLE / FLAMMABLE	FLAMMABLE SOLID	FLAMMABLE GAS	NON-FLAM GAS	CORROSIVE	OXIDIZER	POISON	DANGEROUS	EXPLOSIVES	ORGANIC PEROXIDE	ORM	RADIOACTIVE
TOTAL STOPS WITHIN MULTNOMAH COUNTY	54	1	7	19	23		3	28	2		3	
PASSING THROUGH	1202	10	54	138	338	15	22	112	37	1	226	1
TOTAL EXPOSURE	1256	11	61	157	361	15	25	140	39	1	229	1

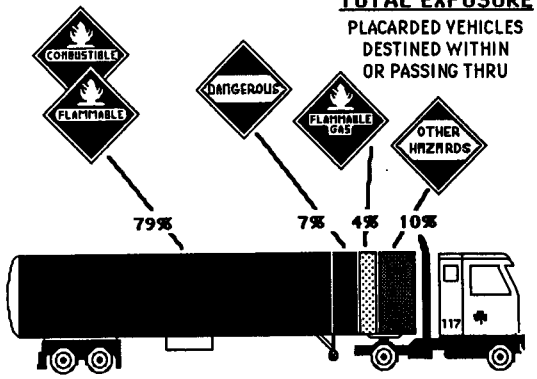
POLK COUNTY

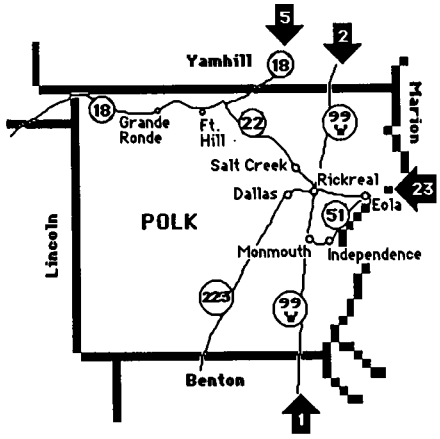
Common Commodities	ID No.	No. of Shipments
Gasoline	UN 1203	18
Fuel Oil, Diesel	NA 1993	7
Sulfuric Acid	UN 1830	4
Sodium Hydroxide, liquid	UN 1824	2
16 Different Commodities Total		44 Total Shipments

Shipment Origin	No. of Vehicles	Common Hazard
Portland	26	85% Flammable
Washington State	3	
Newberg	1	Combustible
Eugene	1	Dangerous
TOTAL SURVEYED VEHICLES DESTINED FOR POLK COUNTY - 31		

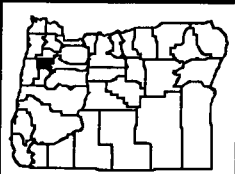
TOTAL EXPOSURE

PLACARDED VEHICLES DESTINED WITHIN OR PASSING THRU





SURVEY ACTIVITY POLK-DESTINED			
	MAR.	AUG.	
WOODBURN	8	14	
DAYTON	5	2	
HUBBARD	1	1	



POLK

HAZARDOUS MATERIAL MOVEMENTS

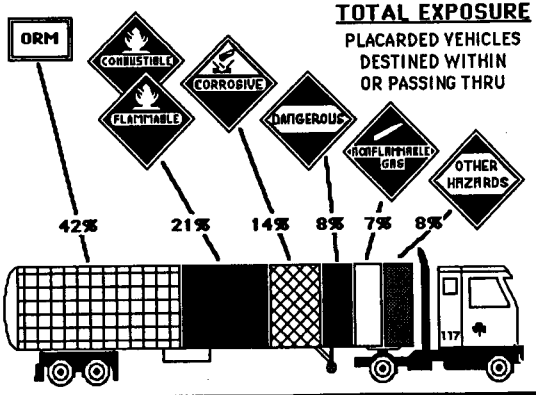
According to County and City of Destination -- All On-Highway Surveys, 1987

	COMBUSTIBLE / FLAMMABLE	FLAMMABLE GAS	NONFLAMMABLE GAS	CORROSIVE	OXIDIZER	POISON	DANGEROUS	EXPLOSIVES	ORM
DALLAS	10						4		
EOLA	1								
FORT HILL	2								
GRAND RONDE	2			1					
INDEPENDENCE	3	1			1				
MONMOUTH	2								
RICKREAL	4								
SALT CREEK	1								
TOTAL STOPS WITHIN POLK COUNTY	25	1		1	1		4		
PASSING THROUGH	38	2	2	1		1	2	1	1
TOTAL EXPOSURE	63	3	2	2	1	1	6	1	1

SHERMAN COUNTY

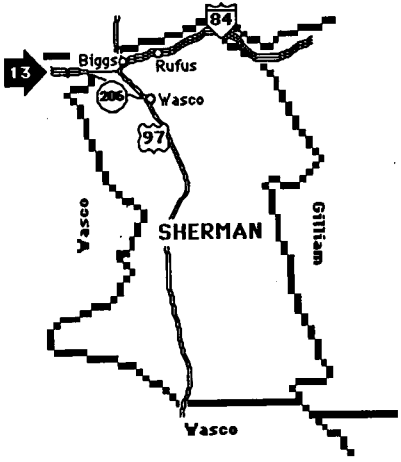
Common Commodities	ID No.	No. of Shipments
Fuel Oil, Diesel	NA 1993	9
Gasoline	UN 1203	7
Battery	UN 2794	1
3 Different Commodities Total		17 Total Shipments

Shipment Origin	No. of Vehicles	Common Hazard
Portland	12	1 - Corrosive
Vancouver, Wa.	1	Combustible
TOTAL SURVEYED VEHICLES DESTINED FOR SHERMAN COUNTY - 13		

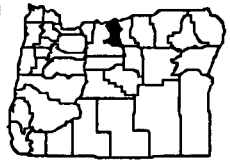


TOTAL EXPOSURE

PLACARDED VEHICLES DESTINED WITHIN OR PASSING THRU



SURVEY ACTIVITY SHERMAN-DESTINED			
	MAR.	AUG.	
WYETH	5	8	



SHERMAN

HAZARDOUS MATERIAL MOVEMENTS

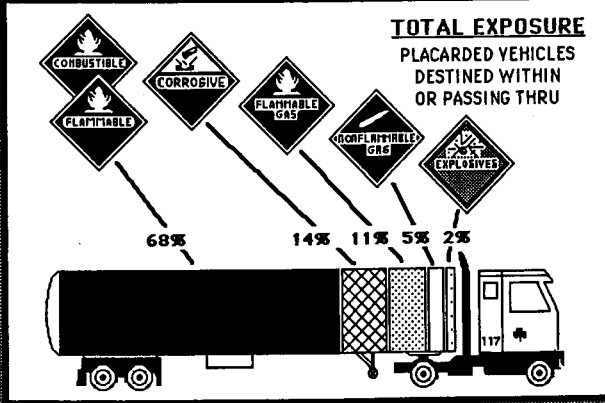
According to County and City of Destination -- All On-Highway Surveys, 1987

	COMBUSTIBLE / FLAMMABLE	FLAMMABLE SOLID	FLAMMABLE GAS	NON-FLAMM GAS	CORROSIVE	OXIDIZER	POISON	DANGEROUS	EXPLOSIVES	ORM	RADIOACTIVE
BIGGS	6										
RUFUS	2				1						
WASCO	5										
TOTAL STOPS WITHIN SHERMAN COUNTY	13				1						
PASSING THROUGH	86	5	4	33	62	10	7	39	11	194	1
TOTAL EXPOSURE	99	5	4	33	63	10	7	39	11	194	1

TILLAMOOK COUNTY

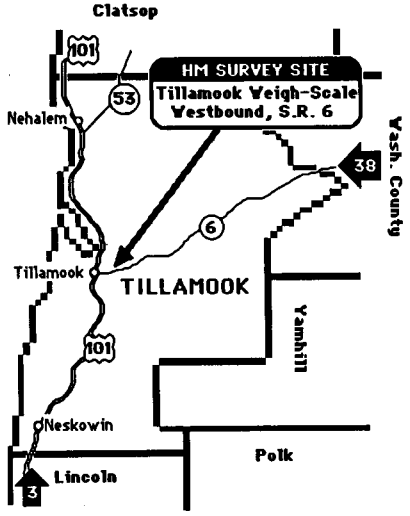
Common Commodities	ID No.	No. of Shipments
Gasoline	UN 1203	17
Fuel Oil, Diesel	NA 1993	14
Hypochlorite Solution	UN 1791	3
Battery	NA 2794	2
Liquefied Petroleum Gas	UN 1075	2
Acetylene	UN 1001	2
18 Different Commodities Total		52 Total Shipments

Shipment Origin	No. of Vehicles	Common Hazard
Portland	33	82% Flammable
Washington State	4	
Tillamook	2	Flammable
Tualatin	1	Flammable Gas
California	1	Corrosive
TOTAL SURVEYED VEHICLES DESTINED FOR TILLAMOOK COUNTY - 41		

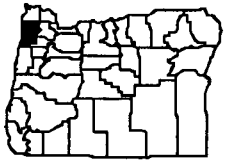


TOTAL EXPOSURE

PLACARDED VEHICLES DESTINED WITHIN OR PASSING THRU



SURVEY ACTIVITY TILLAM.-DESTINED	MAR.	AUG.	NOV.
TILLAMOOK	17	19	
DAYTON		3	
WOODBURN		1	
ASHLAND			1



TILLAMOOK

HAZARDOUS MATERIAL MOVEMENTS

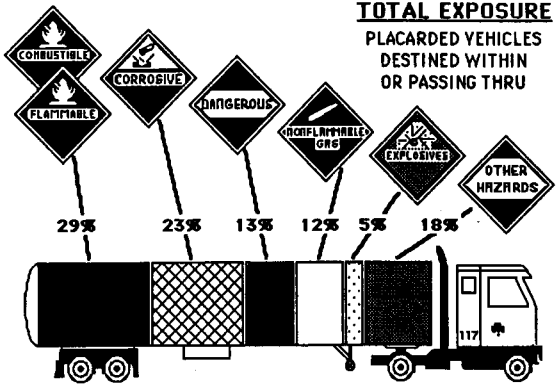
County and City of Destination -- 1987 Surveys

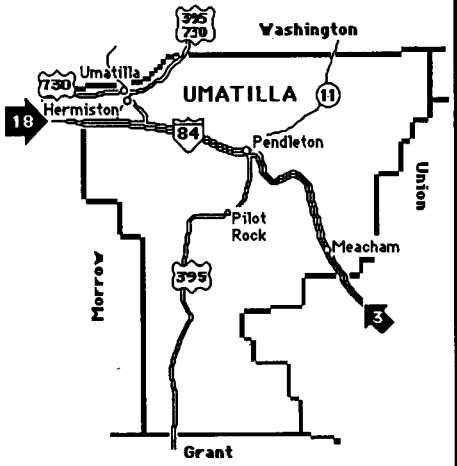
	COMBUSTIBLE / FLAMMABLE	FLAMMABLE GAS	NONFLAMMABLE GAS	CORROSIVE	EXPLOSIVES
NEHALEM	1				
NESKOWIN	1				1
TILLAMOOK	28	4	1	5	
TOTAL STOPS WITHIN TILLAMOOK COUNTY	30	4	1	5	1
PASSING THROUGH		1	1	1	
TOTAL EXPOSURE	30	5	2	6	1

UMATILLA COUNTY

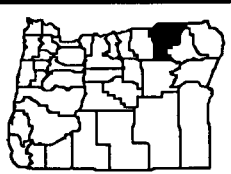
Common Commodities	ID No.	No. of Shipments
Gasoline	UN 1203	8
Paint	UN 1263	2
Carbon Dioxide, refrig. liquid	UN 2187	2
18 Different Commodities Total		26 Total Shipments

Shipment Origin	No. of Vehicles	Common Hazard
Portland	14	64% Flammable
St. Helens	2	Nonflammable Gas
Philomath	1	Blasting Agent
Other States	4	
TOTAL SURVEYED VEHICLES DESTINED FOR UMATILLA COUNTY - 21		





SURVEY ACTIVITY UMATIL.-DESTINED			
	MAR.	AUG.	NOV.
WYETH	7	10	
F.WELL BEND			2
ASHLAND			1
WOODBURN		1	



UMATILLA

HAZARDOUS MATERIAL MOVEMENTS

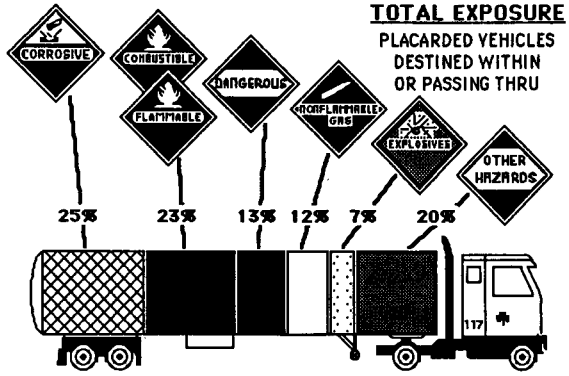
According to County and City of Destination -- All On-Highway Surveys, 1987

	COMBUSTIBLE / FLAMMABLE	FLAMMABLE SOLID	FLAMMABLE GAS	NON-FLAMM GAS	CORROSIVE	OXIDIZER	POISON	DANGEROUS	EXPLOSIVES	ORM	RADIOACTIVE
HERMISTON	6			2	1			2			
MEACHAM									1		
PENDLETON	1				2						
PILOT ROCK								1		1	
UMATILLA	5								1		
TOTAL STOPS WITHIN UMATILLA COUNTY	12			2	3			3	2	1	
PASSING THROUGH	60	5	4	29	55	11	6	30	10	6	11
TOTAL EXPOSURE	72	5	4	31	58	11	6	33	12	7	11

UNION COUNTY

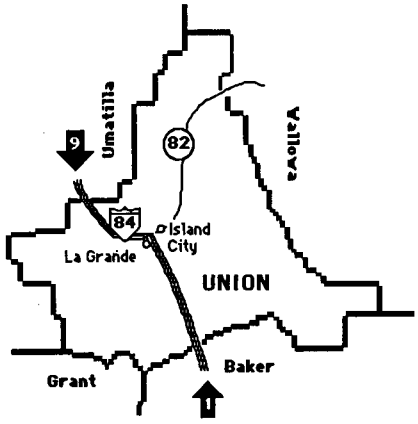
Common Commodities	ID No.	No. of Shipments
Phenol	UN 1671	4
Paint	UN 1263	2
11 Different Commodities Total		15 Total Shipments

Shipment Origin	No. of Vehicles	Common Hazard
Portland	5	60% Flammable
Washington State	4	Poison
Idaho	1	Combustible
TOTAL SURVEYED VEHICLES DESTINED FOR UNION COUNTY - 10		

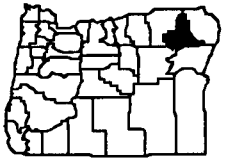


TOTAL EXPOSURE

PLACARDED VEHICLES DESTINED WITHIN OR PASSING THRU



SURVEY ACTIVITY UNION-DESTINED			
	MAR.	AUG.	NOV.
WYETH	3	6	
F.WELL BEND			1



UNION

HAZARDOUS MATERIAL MOVEMENTS

According to County and City of Destination -- All On-Highway Surveys, 1987

	COMBUSTIBLE / FLAMMABLE	FLAMMABLE SOLID	FLAMMABLE GAS	NON-FLAM GAS	CORROSIVE	OXIDIZER	POISON	DANGEROUS	EXPLOSIVES	ORM	RADIOACTIVE
ISLAND CITY							2				
LA GRANDE	4				2		2				
TOTAL STOPS WITHIN UNION COUNTY	4				2		4				
PASSING THROUGH	31	4	1	18	36	5	1	20	11	5	10
TOTAL EXPOSURE	35	4	1	18	38	5	5	20	11	5	10

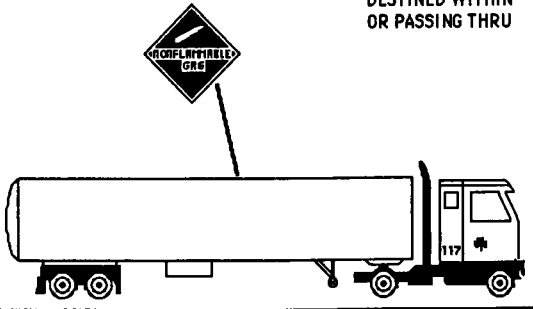
WALLOWA COUNTY

Common Commodities	ID No.	No. of Shipments
Nitrogen, refrigerated liquid	UN 1977	1
1 Commodity Total		1 Total Shipment

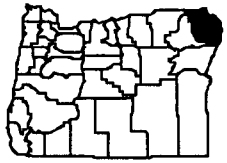
Shipment Origin	No. of Vehicles	Common Hazard
Washington State	1	Nonflammable Gas
TOTAL SURVEYED VEHICLES DESTINED FOR WALLOWA COUNTY - 1		

TOTAL EXPOSURE

PLACARDED VEHICLES
DESTINED WITHIN
OR PASSING THRU



SURVEY ACTIVITY WALLOW.-DESTINED			
	MAR.	AUG.	
WYETH		1	



WALLOWA

HAZARDOUS MATERIAL MOVEMENTS

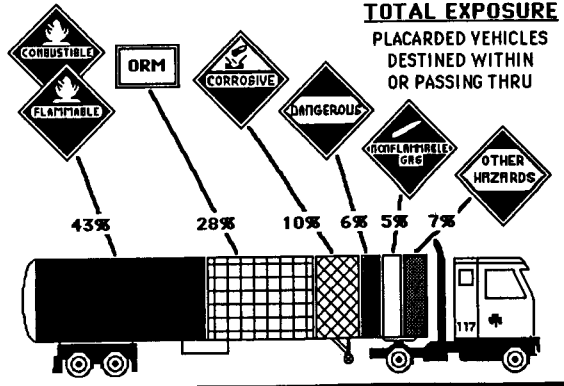
County and City of Destination -- 1987 Surveys

	NONFLAMMABLE GAS
ENTERPRISE	1
TOTAL STOPS WITHIN WALLOWA COUNTY	1
PASSING THROUGH	
TOTAL EXPOSURE	1

WASCO COUNTY

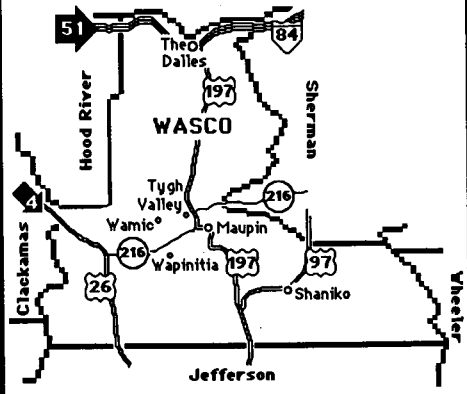
Common Commodities	ID No.	No. of Shipments
Gasoline	UN 1203	31
Fuel Oil, Diesel	NA 1993	18
Oxygen	UN 1072	5
Acetylene	UN 1001	4
Argon	UN 1006	3
17 Different Commodities Total		78 Total Shipments

Shipment Origin	No. of Vehicles	Common Hazard
Portland	50	84% Flammable
Washington State	3	
Clackamas	1	Flammable
Salem	1	Corrosive
TOTAL SURVEYED VEHICLES DESTINED FOR WASCO COUNTY - 55		



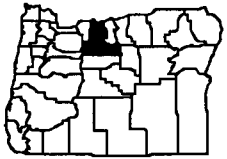
TOTAL EXPOSURE

PLACARDED VEHICLES DESTINED WITHIN OR PASSING THRU



SURVEY ACTIVITY WASCO-DESTINED			
	MAR.	AUG.	
WYETH	20	31	
BRIGHTWOOD	2	2	

The August repeat of the three-day survey at the eastbound Wyeth site exposed a 55% seasonal increase in shipments serving Wasco County, from an average of less than 7 per day to 10.



WASCO

HAZARDOUS MATERIAL MOVEMENTS

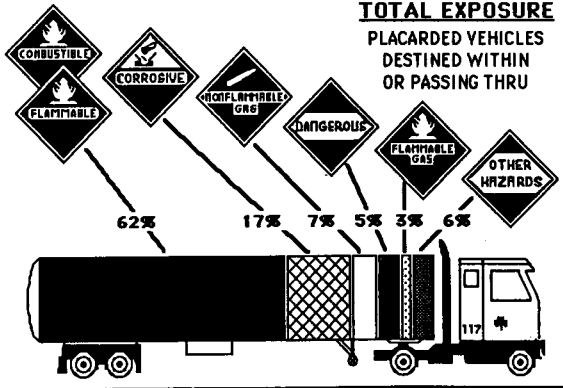
According to County and City of Destination -- All On-Highway Surveys, 1987

	COMBUSTIBLE / FLAMMABLE	FLAMMABLE SOLID	FLAMMABLE GAS	NON-FLAMM GAS	CORROSIVE	OXIDIZER	POISON	DANGEROUS	EXPLOSIVES	ORM	RADIOACTIVE
MAUPIN	2										
SHANIKO	1										
THE DALLES	36		4		3	1			1		
TYGH VALLEY	1			1							
WAMIC	3		1								
WAPINITIA	1										
TOTAL STOPS WITHIN WASCO COUNTY	44		5	1	3	1			1		
PASSING THROUGH	253	5	5	35	67	10	7	42	11	194	1
TOTAL EXPOSURE	297	5	10	36	70	11	7	42	12	194	1

WASHINGTON COUNTY

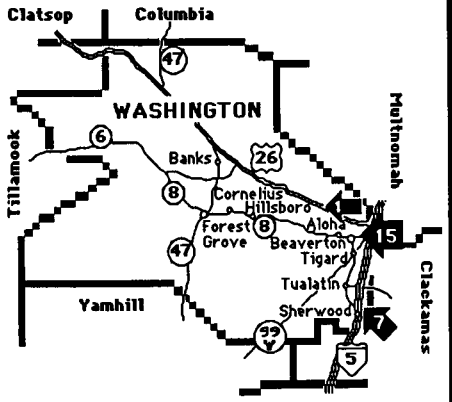
Common Commodities	ID No.	No. of Shipments
Compound, Cleaning, Liquid	NA 1760	4
Paint	UN 1263	3
Paint Related Material	NA 1263	3
Battery	UN 2794	3
Nitrogen, refrigerated liquid	UN 1977	3
Fuel Oil, Diesel	NA 1993	2
27 Different Commodities Total		45 Total Shipments

Shipment Origin	No. of Vehicles	Common Hazard
Washington	9	44% Nonflammable Gas
California	8	75% Corrosive
Other States	4	
McMinnville	2	Combust. & Flamm. Gas
TOTAL SURVEYED VEHICLES DESTINED FOR WASHINGTON COUNTY - 23		



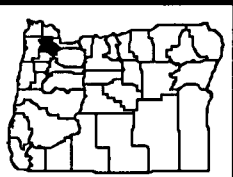
TOTAL EXPOSURE

PLACARDED VEHICLES DESTINED WITHIN OR PASSING THRU



SURVEY ACTIVITY WASH.-DESTINED	MAR.	AUG.	NOV.
ASHLAND			8
OSTRANDER		7	
F.WELL BEND			3
DAYTON		2	
WOODBURN		1	
SCAPPOOSE	1		
WYETH	1		

The number of shipments destined for Wash. Cnty. is limited by the location of survey sites.



WASHINGTON

HAZARDOUS MATERIAL MOVEMENTS

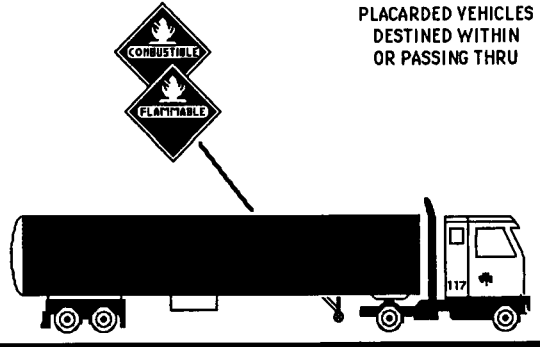
According to County and City of Destination -- All On-Highway Surveys, 1987

	COMBUSTIBLE / FLAMMABLE	FLAMMABLE SOLID	FLAMMABLE GAS	NONFLAMMABLE GAS	CORROSIVE	OXIDIZER	POISON	DANGEROUS	EXPLOSIVES	ORM
ALOHA								1		
BANKS	1									
BEAVERTON			1	2	5			2	1	
CORNELIUS								1		
FOREST GROVE					1					
HILLSBORO	2				1					
SHERWOOD	1									
TIGARD	1		1					1		
TUALATIN	2			2						
TOTAL STOPS WITHIN WASHINGTON COUNTY	7		2	4	7			5	1	
PASSING THROUGH	671	4	36	74	181	7	15	46	12	23
TOTAL EXPOSURE	678	4	38	78	188	7	15	51	13	23

WHEELER COUNTY

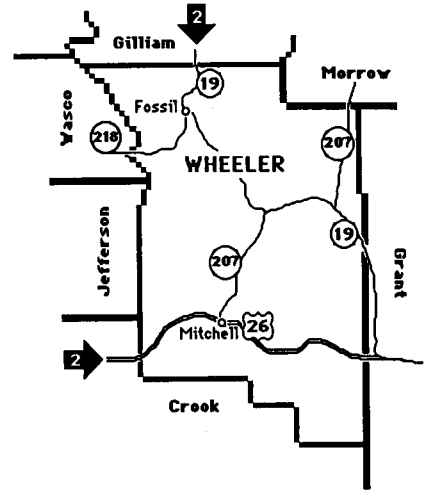
Common Commodities	ID No.	No. of Shipments
Gasoline	UN 1203	4
1 Commodity		4 Total Shipments

Shipment Origin	No. of Vehicles	Common Hazard
Portland	3	
Salem	1	
TOTAL SURVEYED VEHICLES DESTINED FOR WHEELER COUNTY - 4		

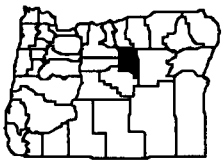


TOTAL EXPOSURE

PLACARDED VEHICLES
DESTINED WITHIN
OR PASSING THRU



SURVEY ACTIVITY WHEELER-DESTINED		
	MAR.	AUG.
WYETH	1	1
WOODBURN	1	
BRIGHTWOOD		1



WHEELER

HAZARDOUS MATERIAL MOVEMENTS

County and City of Destination -- 1987 Surveys

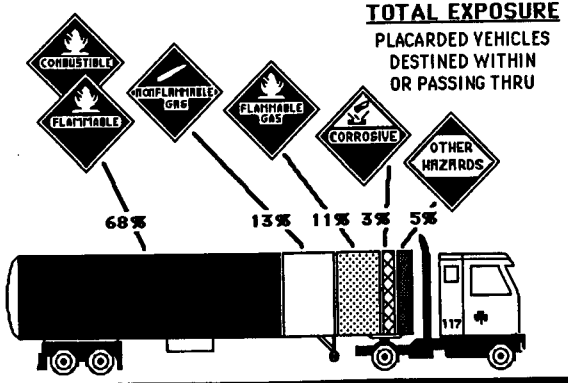
FOSSIL	2
MITCHELL	2
TOTAL STOPS WITHIN WHEELER COUNTY	4
PASSING THROUGH	7
TOTAL EXPOSURE	11

YAMHILL COUNTY

Common Commodities	ID No.	No. of Shipments
Gasoline	UN 1203	45
Fuel Oil, Diesel	NA 1993	20
Oxygen, refrigerated liquid	UN 1073	14
Oxygen	UN 1072	9
Liquefied Petroleum Gas	UN 1075	5
Acetylene	UN 1001	4
37 Different Commodities Total		162 Total Shipments

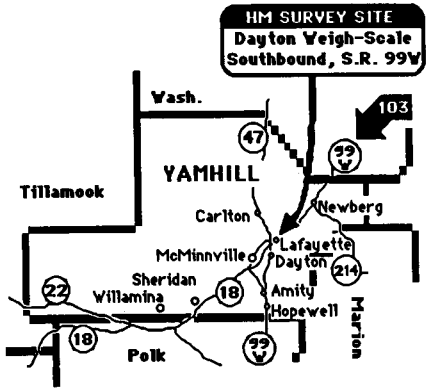
Shipment Origin	No. of Vehicles	Common Hazard
Portland	72	85% Flammable
Washington State	26	50% Nonflammable Gas
McMinnville	8	75% Flammable
California	2	Dangerous-placarded
Other	7	

TOTAL SURVEYED VEHICLES DESTINED FOR YAMHILL COUNTY - 115



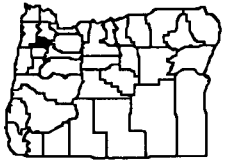
TOTAL EXPOSURE

PLACARDED VEHICLES DESTINED WITHIN OR PASSING THRU



SURVEY ACTIVITY YAMHILL-DESTINED	MAR.	AUG.	NOV.
DAYTON	43	60	
WOODBURN	1		
ASHLAND			2
OSTRANDER		9	

The August repeat of the three-day survey at the southbound Dayton site exposed a 40% seasonal increase in shipments serving Yamhill County, from an average of 14 per day to 20.



YAMHILL

HAZARDOUS MATERIAL MOVEMENTS

According to County and City of Destination -- All Surveys, 1987

	COMBUSTIBLE / FLAMMABLE	FLAMMABLE GAS	NONFLAMMABLE GAS	CORROSIVE	DANGEROUS	EXPLOSIVES	ORM
AMITY	4		1	2			
CARLTON	1						
DAYTON		1	2				1
HOPEWELL	1						
LAFAYETTE	1						
MCMINNVILLE	56	7	17		2		
NEWBERG	5	1			1		
SHERIDAN	9	2	1	1			
WILLAMINA	7	2					
TOTAL STOPS WITHIN YAMHILL COUNTY	84	13	21	3	3		1
PASSING THROUGH	37	6	2	2	2	1	2
TOTAL EXPOSURE	121	19	23	5	5	1	3

PART III

INDIVIDUAL SURVEY LOCATION ANALYSIS

SUMMARY BY SURVEY LOCATION

The following sections summarize the results of the on-highway hazardous material surveys at each of the 11 weigh-scale locations.

Each section discusses the location, the mix of hazardous materials traveling through there, the number and type of shipments by hour of day and the distribution of materials by placard/hazard class. Additionally, each section provides a listing of the individual commodities recorded from shipping papers, the number of shipments found on surveyed trucks and the average quantity of each material. The last four sections, the ports of entry and Ostrander, include information about the types of containers used in the transport of each specific hazardous material.

For the 7 scale locations outside Portland, numbers are displayed pairing the totals of the March survey beside totals of the August survey. Some survey locations show significant differences, in hazards moving and commodities transported, between the two periods.

Location summaries appear in the following order:

1. **WOODBURN**
2. **WYETH**
3. **SCAPPOOSE**
4. **BRIGHTWOOD**
5. **DAYTON**
6. **HUBBARD**
7. **TILLAMOOK**
8. **ASHLAND POE**
9. **KLAMATH FALLS POE**
10. **FAREWELL BEND POE**
11. **OSTRANDER - WASH.**

WOODBURN PORT-OF-ENTRY

The Woodburn port-of-entry facility is located on Interstate 5, 27 miles south of Portland. Traffic was surveyed here on March 16, 17, 18, and again August 10, 11, 12, 1987 (Monday thru Wednesday).

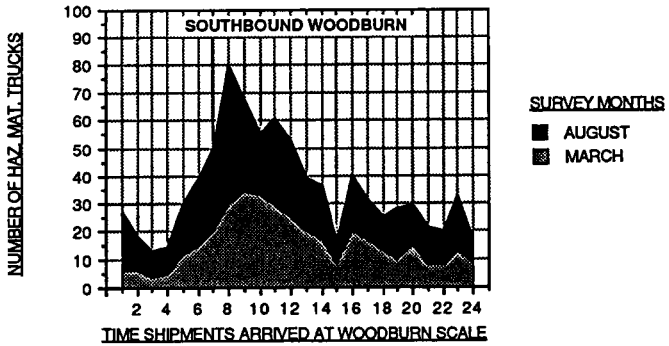
The Woodburn site monitors the heaviest total truck traffic of all scale, or port-of-entry, facilities in the state. During the March and August surveys, this location averaged 2,314 trucks per 24-hour day. The site also monitors the heaviest traffic of hazardous materials of all Oregon locations. During the surveys, hazardous material movements crossed the scale at a rate of 141 per 24-hour day, or 5.9 per hour.

Traffic southbound at Woodburn carried the most diverse mix of hazardous materials. A total of 141 different commodities were recorded aboard the 848 placarded vehicles surveyed. The most frequent materials were gasoline and fuel oil, diesel (58 percent of total shipments transported)and corrosives (22 percent of shipments). The most common corrosives were sodium hydroxide, liquid (caustic soda) destined for the wood products industry and wet batteries for retail outlets.

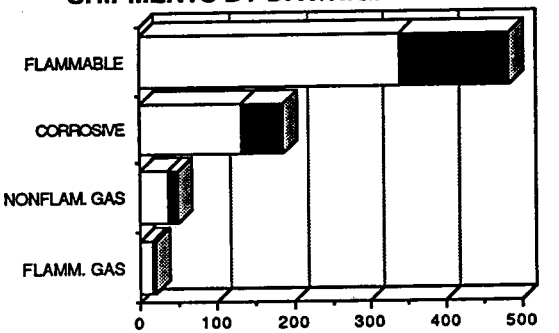
Practically 1 of every 3 vehicles surveyed southbound at Woodburn listed cities in Marion County as their destination. Most were serving Salem with gasoline and diesel. These movements increased only slightly from March to August. Linn County was the destination of 18 percent of movements through Woodburn. A number of flammable movements served the city of Albany, but corrosives were almost as common a hazard destined for Linn County. A total of 41 movements of sodium hydroxide and corrosive liquid were delivered to Halsey in August, contributing to a 120 percent increase (from March to August) in movements serving that county.

The volume of hazardous material traffic at Woodburn peaked between 8 a.m. and 11 a.m. The majority of hazardous materials observed, 67 percent, arrived at Woodburn between 6 a.m. and 6 p.m.

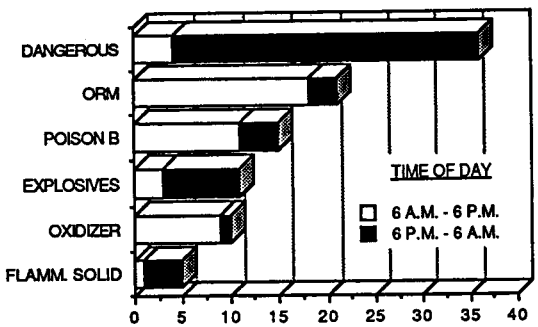
HAZ. MAT. SHIPMENTS BY HOUR OF DAY



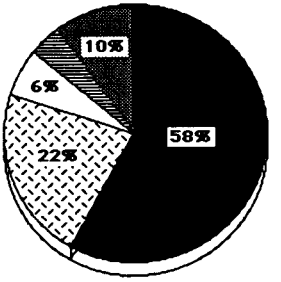
SHIPMENTS BY DAY/NIGHT - WOODBURN



TRUCKS SOUTHBOUND WOODBURN - MAR./AUG. SURVEYS



WOODBURN PORT-OF-ENTRY
MARCH AND AUGUST SURVEYS



SCALE WOODBURN POE SURVEY DATE MARCH 16, 17, 18 AUGUST 10, 11, 12, 1987

	MONDAY MAR. 16 / AUG. 10	TUESDAY MAR. 17 / AUG. 11	WEDNESDAY MAR. 18 / AUG. 12	TOTALS MAR. / AUG.
TOTAL TRUCK TRAFFIC	2610 / 1909	2455 / 2207	2466 / 2238	7531 / 6354
PLACARDED VEHICLES	115 / 129	131 / 156	138 / 179	384 / 464
% OF TOTAL TRAFFIC	4.4 / 6.8	5.3 / 7.1	5.6 / 8.0	5.1 / 7.3
FLAMMABLE	64 / 68	76 / 98	80 / 103	220 / 269
FLAMMABLE SOLID		1 / 2	1 / 1	2 / 3
FLAMMABLE GAS	2 / 4	3 / 3	3 / 5	8 / 12
NONFLAMMABLE GAS	7 / 7	9 / 8	13 / 7	29 / 22
CORROSIVE	25 / 40	28 / 35	23 / 39	76 / 114
OXIDIZER	1 /	2 / 1	5 / 1	8 / 2
POISON	1 / 3	5 / 2	1 / 3	7 / 8
DANGEROUS	4 / 3	5 / 4	7 / 13	16 / 20
EXPLOSIVES	6 / 1		2 / 2	8 / 3
RADIOACTIVE				
OTHER REGULATED MAT.	5 / 3	2 / 3	3 / 5	10 / 11

ODOT/PUC HAZARDOUS MATERIAL SURVEY
Hazardous Material Shipments -- Commodity Specific

WOODBURN PORT-OF-ENTRY
March / August Surveys
1

COMMODITY	UN/NA No.	No. of Shipments	Avg. Wt. or Vol.
Gasoline	UN1203	102 / 149	9,223 gal.
Paint, lacquer base	UN1263	13 / 24	1,797 lbs.
Paint related mat.	NA1263	5 / 7	621 lbs.
Driers, paint	UN1168	2 / 4	77 lbs.
Methyl alcohol	UN1230	12 / 14	8,641 gal.
Flammable liq., n.o.s.	UN1993	9 / 4	8,580 lbs.
Petroleum naphtha	UN1255	3 / 7	6,001 gal.
Resin solution	UN1866	6 / 3	5,335 lbs.
Acetone	UN1090	4 / 5	6,688 lbs.
Toluene	UN1294	3 / 3	4,450 lbs.
Fuel, aviation	UN1863	3 / 2	8,868 gal.
Cement	NA1133	1 / 3	307 lbs.
Petroleum oil	NA1270	2 / 1	218 lbs.
Isopropanol	UN1219	2 / 1	3,421 lbs.
Ethyl Alcohol	UN1170	3 /	2,000 lbs.
Compound, clean., liq.	NA1993	2 / 1	1,166 lbs.
Xylene	UN1307	/ 2	3,250 gal.
Denatured alcohol	NA1986	1 / 1	
Alcohol, n.o.s.	UN1987	/ 1	6,807 gal.
Heptane	UN1206	1 /	
Cyclohexane	UN1145	1 /	440 lbs.
Triethylamine	UN1296	/ 1	1,480 lbs.
Ink	UN1210	/ 1	9,323 lbs.
Petroleum distillate	UN1268	/ 1	4,000 lbs.
Flammable liq., n.o.s.	UN2784	1 /	4,194 lbs.
Methyl propyl ketone	UN1249	1 /	
Methyl methacrylate monomer, inhibited	UN1247	/ 1	2,500 lbs.
Organophosphorus pesticide	UN2784	1 /	6,360 lbs.
Flamm. liq., corros.	UN2924	1 /	

ODOT/PUC HAZARDOUS MATERIAL SURVEY
Hazardous Material Shipments -- Commodity Specific

WOODBURN PORT-OF-ENTRY
March / August Surveys
2

COMMODITY	UN/NA No.	No. of Shipments	Avg. Wt. or Vol.
Fuel oil, diesel	NA1993	71 / 66	7,466 gal.
Combust. liq., n.o.s.	NA 1993	2 / 14	6,386 gal.
Formaldehyde solut.	UN2209	7 / 2	40,979 lbs.
Asphalt, cut back	NA 1999	1 / 2	58,185 lbs.
Paint	UN1263	1 / 1	203 lbs.
Paint related mat.	NA 1263	2 /	
Fuel, aviation	UN1863	/ 2	9,000 gal.
Petroleum naphtha	UN1255	2 /	
Petroleum oil	NA1270	/ 1	
Glycol Ether	NA 1993	1 /	
Kerosene	UN1223	/ 1	85 lbs.
Compound, clean., liq.	NA 1993	/ 1	220 gal.

COMMODITY	UN/NA No.	No. of Shipments	Avg. Weight or Volume
Matches, safety	UN1944	/ 2	212 lbs.
Matches, strk. anywh.	UN1331	/ 1	1,224 lbs.
Smokeless powder	NA1325	1 /	3 lbs.
Phosphorus, yellow	UN1381	1 /	6 lbs.
Potassium metal	UN2257	1 /	4 lbs.
Calcium carbide	UN1402	/ 1	32,200 lbs.
Calcium, metal and alloys, pyrophoric	UN1855	/ 1	2,100 lbs.
Flamm. solid, n.o.s.	UN1325	1 /	

ODOT/PUC HAZARDOUS MATERIAL SURVEY
Hazardous Material Shipments -- Commodity Specific

WOODBURN PORT-OF-ENTRY
March / August Surveys
3

COMMODITY	UN/NA No.	No. of Shipments	Avg. Wt. or Vol.
Acetylene	UN1001	5 / 7	10,524 lbs.
Liquefied petro. gas	UN1075	3 / 9	9,059 gal.
Hydrogen	UN1049	3 / 5	1,800 cu. ft.
Methylacetylene/ Propadiene	UN1060	1 / 1	425 lbs.
Compressed gas, n.o.s.	UN1954	/ 1	30 lbs.
Refrigerant gas, n.o.s.	UN1954	1 /	

COMMODITY	UN/NA No.	No. of Shipments	Avg. Weight or Volume
Oxygen	UN1072	11 / 7	3,630 lbs.
Oxygen, refrig. liq.	UN1073	8 / 10	22,453 lbs.
Nitrogen	UN1066	5 / 7	2,766 lbs.
Nitrogen, refrig. liq.	UN1977	6 / 3	24,080 lbs.
Carbon dioxide	UN1013	1 / 3	3,558 lbs.
Carbon dioxide, ref.	UN2187	6 / 4	34,862 lbs.
Helium	UN1046	6 / 7	1,698 lbs.
Compressed gas, n.o.s.	UN1956	7 / 6	3,434 lbs.
Argon	UN1006	5 / 4	10,232 lbs.
Argon, refrig. liq.	UN1951	/ 1	2,100 lbs.
Chlorine	UN1017	3 / 4	11,243 lbs.
Nitrous Oxide	UN1070	2 / 2	1,005 lbs.
Air, compressed	UN1002	3 /	605 lbs.
Ammonia, anhydrous	UN1005	2 /	40,560 lbs.
Dichlorodifluorometh.	UN1028	1 / 1	872 lbs.
Refrigerant gas, n.o.s.	UN1078	1 / 1	30 lbs.
Chlorodifluoro-methane	UN1018	1 /	
Hexafluoropropylene oxide	NA1956	/ 1	185 lbs.
Sulfur dioxide	UN1079	/ 1	5,000 lbs.
Fire extinguisher	UN1044	1 /	328 lbs.

ODOT/PUC HAZARDOUS MATERIAL SURVEY
Hazardous Material Shipments -- Commodity Specific

WOODBURN PORT-OF-ENTRY
March / August Surveys
4

COMMODITY	UN/NA No.	No. of Shipments	Avg. Weight or Volume
Methyl ethyl ketone peroxide	UN2550	1 / 1	320 lbs.
Organic peroxide, liq.	NA9183	/ 1	50 lbs.

COMMODITY	UN/NA No.	No. of Shipments	Avg. Weight or Volume
Trichloro - s - triazinetrione, dry	UN2468	3 / 2	345 lbs.
Sodium dichloro - s - triazinetrione	UN2465	2 /	671 lbs.
Calcium hypochlorite, hydrated	UN2880	4 /	90 lbs.
Nitric acid	UN2031	1 / 3	17,812 lbs.
Ammonium nitrate fertilizer	UN2067	3 /	40,787 lbs.
Ammonium nitrate mixed fertilizer	UN2069	3 /	61,497 lbs.
Oxidizing mat., n.o.s.	UN1479	2 / 1	585 lbs.
Hydrogen perox. sol.	UN2014	/ 1	2,910 lbs.
Lithium hypochlorite, compound, dry	UN1471	1 /	511 lbs.
Chromic acid	NA1463	1 /	
Potassium permanganate	UN1490	/ 1	360 lbs.

ODOT/PUC HAZARDOUS MATERIAL SURVEY
Hazardous Material Shipments -- Commodity Specific

WOODBURN PORT-OF-ENTRY
March / August Surveys
5

COMMODITY	UN/NA No.	No. of Shipments	Avg. Weight or Volume
Phenol	UN1671	6 / 5	47,220 lbs.
Methyl bromide, liq.	UN1062	/ 2	1,075 lbs.
Azinphos methyl, solid	NA2783	1 /	2,416 lbs.
Disulfoton mixture, dry	NA2783	1 /	534 lbs.
Organophosphorus pesticide	UN2783	1 /	1,719 lbs.
Carbofuran mix	NA 2757	1 /	2,437 lbs.
Arsenic acid solution	UN1553	/ 1	44,180 lbs.
Chloropicrin, liquid	UN1580	1 /	
Poison B, liq., n.o.s.	UN2810	/ 1	28 lbs.

COMMODITY	UN/NA No.	No. of Shipments	Avg. Weight or Volume
Sodium hydroxide, liquid	UN1824	29 / 50	48,818 lbs.
Sodium hydrox. dry	UN1823	3 / 3	15,005 lbs.
Battery, wet w/acid	UN2794	27 / 25	27,738 lbs.
Battery, wet w/alkali	UN2795	1 /	310 lbs
Battery, dry	NA1813	1 /	470 lbs.
Battery fluid, acid	UN2796	3 / 2	515 lbs.
Corrosive liq., n.o.s.	UN1760	/ 31	43,138 lbs.
Compound, clean., liq.	NA1760	9 / 7	1,197 lbs.
Hypochlorite solution	UN1791	6 / 8	4,996 lbs.
Sulfuric acid	UN1830	5 / 5	29,158 lbs.
Hydrochloric acid solution	UN1789	6 / 1	30,366 lbs.
Hydrochloric acid mixture	NA1789	2 / 2	319 lbs.
Corrosive solid, n.o.s.	UN1759	2 / 5	686 lbs.
Ammonia hydroxide	NA2672	2 / 4	25,673 lbs.

ODOT/PUC HAZARDOUS MATERIAL SURVEY
Hazardous Material Shipments -- Commodity Specific

WOODBURN PORT-OF-ENTRY
March / August Surveys
6

(continued)

COMMODITY	UN/NA No.	No. of Shipments	Avg. Weight or Volume
Compound, clean. liq.	NA1790	3 /	50 lbs.
Paint related mat.	NA1760	/ 3	
Potassium hydroxide solution	UN1814	2 /	25,104 lbs.
Coal tar dye, liquid	NA2801	2 /	1,902 lbs.
Acetic acid, glacial	UN2789	2 /	42 lbs.
Acetic acid	UN2790	/ 1	475 lbs.
Hydrofluoric acid	UN1790	1 / 1	1,585 lbs.
Hydrogen fluoride	UN1052	1 /	
Ammonium hydrogen fluoride solution	UN2817	1 /	1,060 lbs.
Sodium chlorite solution	UN1908	1 /	595 lbs.
Ferric chloride solution	UN2582	/ 1	188 lbs.
Monoethanolamine	UN2491	1 /	
Bromine	UN1744	1 /	8 lbs.
Alkaline liq., n.o.s.	NA1719	1 /	356 lbs.

COMMODITY	UN/NA No.	No. of Shipments	Avg. Weight or Volume
High explosive		3 / 1	16,675 lbs.
Mine		2 / 1	43,075 lbs.
Torpedoes		2 /	12,507 lbs.
Detonating cord		1 / 1	10,025 lbs.
Detonators		1 / 1	185 lbs.
Small arms ammunition		1 / 3	171 lbs.
Ammonium nitrate - fuel oil mixture		/ 2	1,450 lbs.
Blasting agent, n.o.s.		/ 1	2, 000 lbs.

ODOT/PUC HAZARDOUS MATERIAL SURVEY
Hazardous Material Shipments -- Commodity Specific

WOODBURN PORT-OF-ENTRY
March / August Surveys
7

	COMMODITY	UN/NA No.	No. of Shipments	Avg. Weight or Volume
	Radioactive material special form, n.o.s.	UN2974	1 /	
	Radioactive mat. n.o.s.	UN2982	/ 1	510 lbs.

ORM

	COMMODITY	UN/NA No.	No. of Shipments	Avg. Weight or Volume
A	Trichloroethylene	UN1710	/ 3	2,958 lbs.
	Perchloroethylene	UN1897	/ 1	12,080 lbs.
	Malathion	NA2783	1 /	
B	Aluminum sulfate solution	NA1760	7 / 7	44,813 lbs.
C	Asbestos, white	UN2590	/ 2	44,130 lbs.
D	Consumer commodity		2 /	
	Aerosols	UN1950	/ 1	1,300 lbs.
E	Polychlorinated biphenyls	UN2315	2 /	
	Pentachlorophenol	NA2020	1 /	
	Hazardous substance, liquid	NA9188	/ 1	24,720 lbs.
	Hazardous waste, liquid	NA 9189	/ 1	

EASTBOUND WYETH

The eastbound Wyeth scale is located on Interstate 84, five miles east of Cascade Locks. Traffic was surveyed at Wyeth on March 9, 10, 11, and again August 3, 4, 5, 1987 (Monday thru Wednesday).

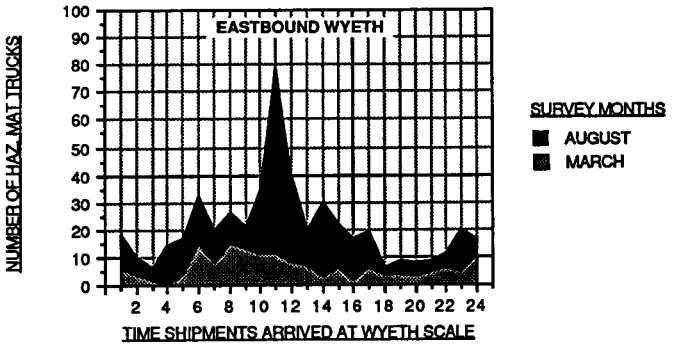
Wyeth ranks fourth, among the 11 survey locations, in total truck traffic volume. An average of 1,104 trucks crossed the site per 24-hour day, or 46 per hour. By coincidence, the count of trucks weighed and bypassing the scale during the three-day period was exactly the same (3,311 total) in both the March and August surveys. Wyeth ranks second, behind only Woodburn, in the rate of hazardous material movements. Wyeth averaged 84 movements per 24-hour day, or 3.5 per hour.

Hazardous material traffic eastbound through Wyeth carried a diverse mix of commodities. Within 121 different materials, the most common was hazardous waste, (Other Regulated Material, ORM-E). Transported in dump trucks in 43,000 pound shipments, the waste was destined for Chem Security Systems chemical waste disposal site near Arlington, Oregon. The ORM was from a summer-long, federally-sponsored "Superfund" cleanup in Washington state. Subtract those shipments, 36 percent of the 506 total movements surveyed at Wyeth, and the site averages 54 hazardous material movements per 24 hours (2.2 per hour). Other common commodities passing through the Wyeth location were gasoline and diesel (35 percent of total movements) and corrosives (10 percent).

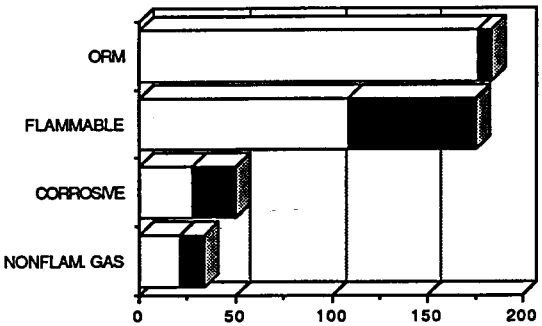
While many movements through Wyeth were delivering gasoline to the cities of Hood River and The Dalles, 1 of every 5 vehicles surveyed through Wyeth were destined for Washington state. A number of those movements were bound for Yakima, Pasco and Spokane with DANGEROUS placards marking their combination of flammables and corrosives. Most exited Oregon at Umatilla.

The volume of hazardous material traffic peaks between 10 a.m. and 2 p.m., with 71 percent of surveyed movements arriving between 6 a.m. and 6 p.m. Without the shipments of hazardous waste, which arrived almost exclusively during the day, traffic eastbound here would have been equally divided between day and night movements. Prominent among the trucks observed after 6 p.m. were those placarded CORROSIVE. The survey found 46 percent of corrosive material traveling through Wyeth at night.

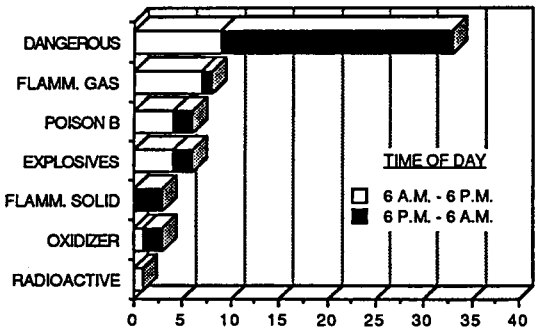
HAZ. MAT. SHIPMENTS BY HOUR OF DAY



SHIPMENTS BY DAY/NIGHT - WYETH



TRUCKS EASTBOUND WYETH - MAR./AUG. SURVEYS



WESTBOUND SCAPPOOSE

The Scappoose scale is located on U.S. highway 30, two miles east of the city of Scappoose. Traffic was surveyed at Scappoose on March 9, 10, 11, and again August 3, 4, 5, 1987 (Monday thru Wednesday).

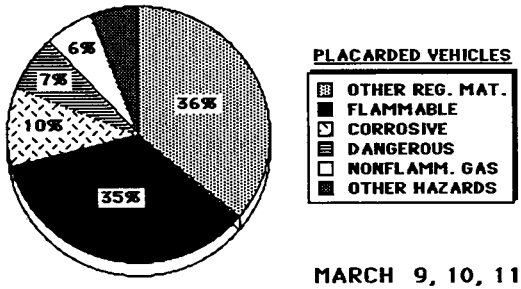
During the survey, total truck traffic averaged 535 trucks per 24-hour day, or 22 per hour. Hazardous material movements crossed this location at a rate of 39 per 24 hours, or 1.6 per hour.

There was a mix of 54 different commodities recorded at Scappoose. The most common materials included flammables and combustibles (62 percent of total movements), such as gasoline and diesel, and corrosives (23 percent), such as sodium hydroxide, liquid.

The majority of movements through Scappoose served the cities of St. Helens, Astoria and Longview, Washington. Fully 30 percent of the movements surveyed at Scappoose were destined for Longview with shipments of gasoline and diesel. The trucks exited Oregon at Rainier.

The volume of hazardous material traffic westbound through Scappoose continues rather constant from 6 a.m. thru 2 p.m. Trucks arriving at the scale from 6 a.m. - 6 p.m. account for 71 percent of the total. As with the Wyeth survey, a number of corrosive movements were observed at night (42 percent of CORROSIVE-placarded trucks through Scappoose).

EASTBOUND WYETH
MARCH AND AUGUST SURVEYS



SCALE EASTBOUND WYETH SURVEY DATE MARCH 9, 10, 11 AUGUST 3, 4, 5, 1987

	MONDAY MAR. 9 / AUG. 3	TUESDAY MAR. 10 / AUG. 4	WEDNESDAY MAR. 11 / AUG. 5	TOTALS MAR. / AUG.
TOTAL TRUCK TRAFFIC	1022 / 1051	1174 / 1116	1115 / 1144	3311 / 3311
PLACARDED VEHICLES	46 / 111	58 / 117	58 / 116	162 / 344
% OF TOTAL TRAFFIC	4.5 / 10.6	4.9 / 10.5	5.2 / 10.1	4.9 / 10.4
FLAMMABLE	19 / 31	29 / 36	19 / 43	67 / 110
FLAMMABLE SOLID	/ 1	1 /	1 /	2 / 1
FLAMMABLE GAS		2 / 3	4 / 2	6 / 5
NONFLAMMABLE GAS	4 / 5	2 / 8	5 / 8	11 / 21
CORROSIVE	6 / 8	9 / 8	10 / 9	25 / 25
OXIDIZER		1 /	2 /	3 /
POISON	1 /	/ 1	2 / 1	3 / 2
DANGEROUS	5 / 8	7 / 4	4 / 6	16 / 18
EXPLOSIVES	3 /	2 / 1		5 / 1
RADIOACTIVE			1 /	1 /
OTHER REGULATED MAT.	8 / 58	5 / 56	10 / 47	23 / 161

ODOT/PUC HAZARDOUS MATERIAL SURVEY
Hazardous Material Shipments -- Commodity Specific

WYETH EASTBOUND
March / August Surveys
1

COMMODITY	UN/NA No.	No. of Shipments	Avg. Wt. or Vol.	
Gasoline	UN1203	29 / 56	8,429	gal.
Paint, lacquer base	UN1263	17 / 29	5,425	lbs.
Paint related mat.	NA1263	/ 13	1,802	lbs.
Driers, paint	UN1168	5 / 2	308	lbs.
Acetone	UN1090	3 / 4	2,605	lbs.
Resin solution	UN1866	3 / 4	275	lbs.
Xylene	UN1307	3 / 3	768	lbs.
Isopropanol	UN1219	4 / 2	1,305	lbs.
Flammable liq., n.o.s.	UN1993	4 / 2	214	lbs.
Cement	NA1133	2 / 2	1,890	lbs.
Petroleum oil	NA1270	3 / 1	788	lbs.
Compound, tree or weed killing, liquid	NA1993	1 / 2	2,083	lbs.
Compound, clean., liq.	NA1993	1 / 2	127	lbs.
Methyl alcohol	UN1230	/ 3	1,835	lbs.
Alcohol, n.o.s.	UN1987	2 / 1	450	lbs.
Petroleum naphtha	UN1255	/ 2	4,950	gal.
Fuel, aviation	UN1863	1 / 1	5,117	gal.
Methyl ethyl ketone	UN1193	1 / 1		
Flammable liquid, poisonous	UN1992	1 / 1	1,840	lbs.
Flammable liquid, corrosive	UN2924	/ 1	31	lbs.
Ink	UN1210	/ 1	979	lbs.
Toluene	UN1294	/ 1	886	lbs.
Coating solution	UN1139	/ 1	6,000	lbs.
Diethylamine solut.	UN1154	/ 1	15	lbs.
Trichlorosilane	UN1295	1 /	230	lbs.
Organophosphorus pesticide	UN2784	1 /	9,270	lbs.

ODOT/PUC HAZARDOUS MATERIAL SURVEY
Hazardous Material Shipments -- Commodity Specific

WYETH EASTBOUND
March / August Surveys
2

COMMODITY	UN/NA No.	No. of Shipments	Avg. Wt. or Vol.	
Fuel oil, diesel	NA1993	22 / 23	6,759	gal.
Asphalt	NA1993	/ 3	26,740	lbs.
Asphalt, cut back	NA1999	/ 5	61,684	lbs.
Combust. liq., n.o.s.	NA1993	/ 5	6,422	gal.
Paint	UN1263	/ 2	857	lbs.
Paint related mat.	NA1263	/ 2	2,500	lbs.
Compound, clean., liq.	NA1993	/ 3	20	lbs.
Benzaldehyde	NA1989	2 /	5,000	gal.
Fuel, aviation	UN1863	/ 1		
Petroleum naphtha	UN1255	1 /		
Insecticide, liq. n.o.s.	NA1993	/ 1	112	lbs.

COMMODITY	UN/NA No.	No. of Shipments	Avg. Weight or Volume	
Matches, safety	UN1944	/ 1	42	lbs.
Zirconium Imagnesium	NA2813	1 /		
Aluminum phosphate	UN1397	1 /	57	lbs.
Flamm. solid, n.o.s.	UN1325	/ 1	37,000	lbs.

ODOT/PUC HAZARDOUS MATERIAL SURVEY
Hazardous Material Shipments -- Commodity Specific

WYETH EASTBOUND
March / August Surveys
3

COMMODITY	UN/NA No.	No. of Shipments	Avg. Wt. or Vol.
Acetylene	UN1001	4 / 4	3,729 lbs.
Liquefied petro. gas	UN1075	1 / 2	1,412 gal.
Compressed gas, n.o.s.	UN1954	2 /	96 lbs.
Refrigerant gas, n.o.s.	UN1954	/ 1	
Hydrogen	UN1049	1 /	76,000 lbs.
Methylacetylene/ Propadiene	UN1060	/ 1	120 lbs.
Engine starting fluid	UN1960	/ 1	4 lbs.
Cigarette lighter	UN1057	1 /	47 lbs.

COMMODITY	UN/NA No.	No. of Shipments	Avg. Weight or Volume
Oxygen	UN1072	5 / 4	4,433 lbs.
Oxygen, refrig. liq.	UN1073	2 / 3	16,008 lbs.
Nitrogen, refrig. liq.	UN1977	5 / 4	6,564 gal.
Argon	UN1006	1 / 3	318 lbs.
Argon, refrig. liq.	UN1951	1 / 3	3,600 gal.
Refrigerant gas, n.o.s.	UN1078	/ 7	115 lbs.
Dichlorodifluoro-methane	UN1028	1 / 5	1,905 lbs.
Chlorine	UN1017	2 / 3	24,058 lbs.
Ammonia, anhydrous	UN1005	2 / 3	11,068 lbs.
Chlorodifluoro-methane	UN1018	/ 4	1,389 lbs.
Carbon dioxide	UN1013	1 / 1	1,350 lbs.
Carbon dioxide, refrigerated	UN2187	/ 2	39,750 lbs.
Compressed gas, n.o.s.	UN1956	1 / 2	2,550 lbs.
Sulfur dioxide	UN1079	1 / 2	8,967 lbs.
Helium	UN1046	/ 1	7,290 lbs.
Helium, refrig. liq.	UN1963	/ 1	1,050 lbs.
Fire extinguisher	UN1044	1 / 1	105 lbs.

ODOT/PUC HAZARDOUS MATERIAL SURVEY
Hazardous Material Shipments -- Commodity Specific

WYETH EASTBOUND
March / August Surveys
4

COMMODITY	UN/NA No.	No. of Shipments	Avg. Weight or Volume
Methyl ethyl ketone peroxide	UN2550	/ 1	5,390 lbs.

COMMODITY	UN/NA No.	No. of Shipments	Avg. Weight or Volume
Trichloro - s - triazinetrione, dry	UN2468	3 / 1	898 lbs.
Sodium dichloro - s - triazinetrione	UN2465	1 / 2	1,271 lbs.
Oxidizing mat., n.o.s.	UN1479	2 /	400 lbs.
Hydrogen perox.solut.	UN2014	1 /	4,860 lbs.
Calcium hypochlorite, hydrated	UN2880	1 /	184 lbs.
Sodium chlorite	UN1496	1 /	
Sodium nitrite	UN1500	1 /	514 lbs.
Nitric acid	UN2031	/ 1	110 lbs.

COMMODITY	UN/NA No.	No. of Shipments	Avg. Weight or Volume
Phenol	UN1671	2 / 2	47,690 lbs.
Chloropicrin, liquid	UN1580	1 /	2,784 lbs.
Poison B, liq., n.o.s.	UN2810	1 /	110 gal.
Bipyridilium pesticide	UN2781	/ 1	102 lbs.
Carbamate pesticide	UN2757	/ 1	414 lbs.
Organophosphorus pesticide	UN2783	/ 1	

ODOT/PUC HAZARDOUS MATERIAL SURVEY
Hazardous Material Shipments -- Commodity Specific

WYETH EASTBOUND
March / August Surveys
5

COMMODITY	UN/NA No.	No. of Shipments	Avg. Weight or Volume
Battery, wet w/acid	UN2794	10 / 16	10,007 lbs.
Battery fluid, acid	UN2796	/ 3	553 lbs.
Sodium hydroxide, liquid	UN1824	9 / 6	21,391 lbs.
Sodium hydroxide, dry	UN1823	4 / 3	9,871 lbs.
Compound, clean., liq.	NA1760	13 / 8	2,848 lbs.
Hypochlorite solution	UN1791	6 / 5	7,492 lbs.
Corrosive solid, n.o.s.	UN1759	3 / 4	281 lbs.
Sulfuric acid	UN1830	5 / 2	3,473 lbs.
Hydrochloric acid solution	UN1789	4 / 2	10,527 lbs.
Phosphoric acid	UN1805	2 / 3	6,449 lbs.
Corrosive liq., n.o.s.	UN1760	/ 5	1,055 lbs.
Hydrofluoric acid	UN1790	/ 3	2,278 gal.
Compound, clean. liq.	NA1790	3 /	160 lbs.
Alkaline liquid, n.o.s.	NA1719	2 /	48,740 lbs.
Ammonia hydroxide	NA2672	1 / 1	1,862 lbs.
Fluoboric acid	UN1775	1 /	100 gal.
Acetic acid	UN2790	1 /	1,952 lbs.
Dodecylbenzene-sulfonic acid	NA2584	/ 1	515 lbs.
Ethanolamine	UN2491	1 /	
Chromic acid solution	UN1755	1 /	1,500 gal.
Sodium aluminate solution	UN1819	1 /	13,014 lbs.
Potassium hydroxide solution	UN1814	1 /	7,000 gal.
Coal tar dye, liquid	NA2801	/ 1	10,200 lbs.
Corrosive liquid, poisonous	UN2922	1 /	110 gal.

ODOT/PUC HAZARDOUS MATERIAL SURVEY
Hazardous Material Shipments -- Commodity Specific

WYETH EASTBOUND
March / August Surveys
6

COMMODITY	UN/NA No.	No. of Shipments	Avg. Weight or Volume
High explosive		4 /	2,537 lbs.
Torpedoes		/ 1	40,630 lbs.
Rocket ammunition		1 /	2,395 lbs.
Explosive power device		/ 1	
Detonators		2 /	800 lbs.
Small arms ammunition		/ 1	594 lbs.
Ammonium nitrate - fuel oil mixture		/ 1	20,500 lbs.

COMMODITY	UN/NA No.	No. of Shipments	Avg. Weight or Volume
Radioactive material special form, n.o.s.	UN2974	1 /	80 lbs.
Radioactive mat. n.o.s.	UN2982	/ 1	10 lbs.
Copolymer resin		1 /	15,710 lbs.

ODOT/PUC HAZARDOUS MATERIAL SURVEY
Hazardous Material Shipments -- Commodity Specific

WYETH EASTBOUND
March / August Surveys
7

ORM

	COMMODITY	UN/NA No.	No. of Shipments	Avg. Weight or Volume
A	Formaldehyde solut.	UN2209	1 /	508 lbs.
	Methylene chloride	UN1593	1 /	645 lbs.
	Perchloroethylene	UN1897	1 /	1,490 lbs.
	ORM - A, n.o.s.	NA1693	1 /	220 gal.
B	Aluminum sulfate solution	NA1760	/ 1	
	ORM - B, n.o.s.	NA1760	1 /	110 gal.
C	Waste sulfur, solid	UN1350	1 /	165 gal.
	Waste asbestos		1 /	55 gal.
D	Consumer commodity		1 /	764 lbs.
E	Hazardous waste, solid	NA9189	19 / 127	43,873 lbs.
	Hazardous waste, liquid	NA 9189	6 / 10	43,211 lbs.
	Hazardous sub., n.o.s.	NA9188	/ 26	46,830 lbs.
	Polychlorinated biphenyls	UN2315	5 /	20,969 lbs.
	Cupric sulfate	NA9109	/ 1	500 lbs.

WESTBOUND SCAPPOOSE

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During the survey, total truck traffic averaged 535 trucks per 24-hour day, or 22 per hour. Hazardous material movements crossed this location at a rate of 39 per 24 hours, or 1.6 per hour.

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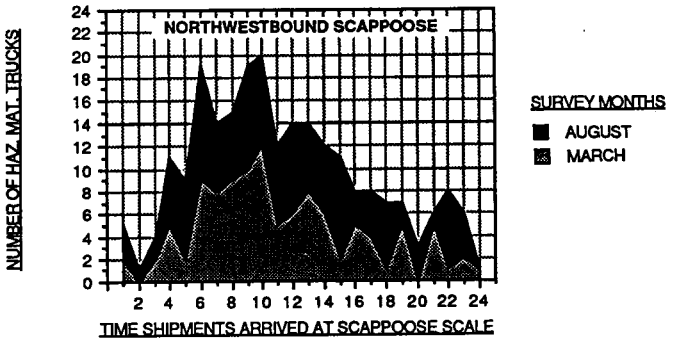
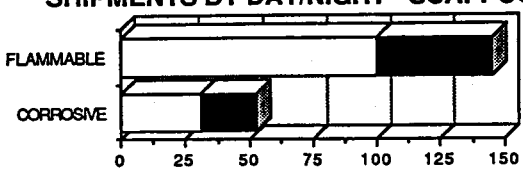
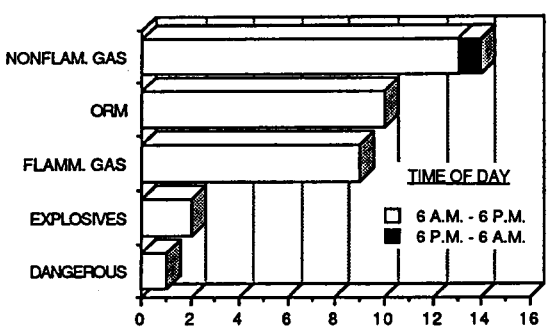
HAZ. MAT. SHIPMENTS BY HOUR OF DAY



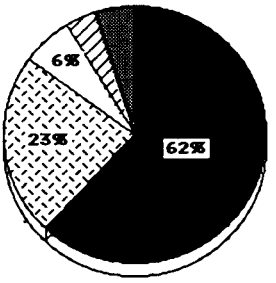
SHIPMENTS BY DAY/NIGHT - SCAPPOOSE



TRUCKS NORTHWESTBOUND SCAPPOOSE - MAR./AUG. SURVEYS



WESTBOUND SCAPPOOSE
MARCH AND AUGUST SURVEYS



SCALE WESTBOUND SCAPPOOSE SURVEY DATE MARCH 9, 10, 11 AUGUST 3, 4, 5, 1987

	MONDAY MAR. 9 / AUG. 3	TUESDAY MAR. 10 / AUG. 4	WEDNESDAY MAR. 11 / AUG. 5	TOTALS MAR. / AUG.
TOTAL TRUCK TRAFFIC	562 / 461	583 / 535	556 / 512	1701 / 1508
PLACARDED VEHICLES	31 / 39	41 / 36	38 / 49	110 / 124
% OF TOTAL TRAFFIC	5.5 / 8.5	7.0 / 6.7	6.8 / 9.6	6.5 / 8.2
FLAMMABLE	16 / 20	29 / 23	26 / 31	71 / 74
FLAMMABLE SOLID				
FLAMMABLE GAS	1 /	1 / 1	3 / 3	5 / 4
NONFLAMMABLE GAS	3 / 3	2 / 2	2 / 2	7 / 7
CORROSIVE	10 / 11	8 / 8	6 / 10	24 / 29
OXIDIZER				
POISON				
DANGEROUS		/ 1		/ 1
EXPLOSIVES	/ 1		/ 1	/ 2
RADIOACTIVE				
OTHER REGULATED MAT.	1 / 4	1 / 1	1 / 2	3 / 7

ODOT/PUC HAZARDOUS MATERIAL SURVEY
Hazardous Material Shipments -- Commodity Specific

WESTBOUND SCAPPOOSE
March / August Surveys
1

COMMODITY	UN/NA No.	No. of Shipments	Avg. Wt. or Vol.
Gasoline	UN1203	44 / 50	9,015 gal.
Flammable liq., n.o.s.	UN1993	1 / 2	2,130 lbs.
Paint, lacquer base	UN1263	1 / 1	4,435 lbs.
Isopropanol	UN1219	1 / 1	10 lbs.
Resin solution	UN1866	/ 2	55 gal.
Butyl acetate	UN1123	/ 1	55 gal.
Methyl ethyl ketone	UN1193	/ 1	42,950 lbs.
Organophosphorus pesticide	UN2784	1 /	600 lbs.
Carbamate pesticide	UN2758	1 /	120 lbs.
Triazine pesticide, n.o.s.	UN2764	1 /	240 lbs.

COMMODITY	UN/NA No.	No. of Shipments	Avg. Wt. or Vol.
Fuel oil, diesel	NA1993	28 / 23	7,246 gal.
Petroleum naphtha	UN1255	1 / 1	55 gal.
Asphalt, cut back	NA 1999	1 / 1	21,742 lbs.

COMMODITY	UN/NA No.	No. of Shipments	Avg. Wt. or Vol.
Liquefied petro. gas	UN1075	4 / 2	1,084 gal.
Acetylene	UN1001	2 / 3	3,763 lbs.
Flammable gas, n.o.s.	UN1954	2 /	64 lbs.
Hydrogen	UN1049	1 /	2,380 lbs.

ODOT/PUC HAZARDOUS MATERIAL SURVEY
Hazardous Material Shipments -- Commodity Specific

WESTBOUND SCAPPOOSE
March / August Surveys
2

COMMODITY	UN/NA No.	No. of Shipments	Avg. Weight or Volume
Oxygen	UN1072	4 / 6	8,780 lbs.
Oxygen, refrig. liq.	UN1073	2 / 2	21,150 lbs.
Carbon dioxide	UN1013	1 / 1	130 lbs.
Carbon dioxide, ref.	UN2187	3 / 4	17,713 lbs.
Argon	UN1006	2 / 3	3,357 lbs.
Argon, refrig. liq.	UN1951	/ 1	
Nitrogen	UN1066	2 / 3	808 lbs.
Compressed gas, n.o.s.	UN1956	2 / 3	1,037 lbs.
Helium	UN1046	1 / 3	240 lbs.
Ammonia, anhydrous	UN1005	1 /	
Sulfur dioxide	UN1079	/ 1	20,000 lbs.
Nitrous Oxide	UN1070	1 /	185 lbs.

COMMODITY	UN/NA No.	No. of Shipments	Avg. Weight or Volume
Hydrogen peroxide solution	UN2014	/ 2	1,060 lbs.
Ammonium nitrate fertilizer	UN2067	/ 1	8,750 lbs.

COMMODITY	UN/NA No.	No. of Shipments	Avg. Weight or Volume
Azinphos methyl, solid	NA2783	1 /	210 lbs.
Methyl bromide, liquid	UN1062	1 /	24 lbs.

ODOT/PUC HAZARDOUS MATERIAL SURVEY
Hazardous Material Shipments -- Commodity Specific

WESTBOUND SCAPPOOSE
March / August Surveys
3

COMMODITY	UN/NA No.	No. of Shipments	Avg. Weight or Volume
Sodium hydroxide; liquid	UN1824	15 / 16	60,341 lbs.
Sulfuric acid	UN1830	4 / 4	48,988 lbs.
Compound, clean., liq.	NA1760	2 / 3	7,800 lbs.
Battery, wet w/acid	UN2794	2 / 1	24,044 lbs.
Battery fluid, acid	UN2796	1 /	36 lbs.
Corrosive liq., n.o.s.	UN1760	/ 3	36,842 lbs.
Hydrochloric acid solution	UN1789	2 /	24,452 lbs.
Fluoboric acid	UN1775	/ 1	
Ammonia hydroxide	NA2672	/ 1	
Hypochlorite solution	UN1791	/ 1	1,625 lbs.
Corrosive solid, n.o.s.	UN1759	/ 1	1,876 lbs.
Sodium hydrogen sulfite solution	NA2693	/ 1	6,390 lbs.

COMMODITY	UN/NA No.	No. of Shipments	Avg. Weight or Volume
High explosive		/ 2	450 lbs.
Blasting agent, n.o.s.		/ 1	2, 400 lbs.

ODOT/PUC HAZARDOUS MATERIAL SURVEY
Hazardous Material Shipments -- Commodity Specific

WESTBOUND SCAPPOOSE
March / August Surveys
4

	ORM COMMODITY	UN/NA No.	No. of Shipments	Avg. Weight or Volume
A	Diazinon and Malathion	NA2783	1 /	839 lbs.
	Perchloroethylene	UN1897	/ 1	411 lbs.
B	Aluminum sulfate solution	NA1760	3 / 3	48,100 lbs.
	Lead fluoborate	NA2291	/ 1	
E	Hazardous sub., n.o.s.	NA9188	/ 3	57,000 lbs.
	Methoxychlor	NA2761	1 /	240 lbs.
	Captan mix	NA9099	1 /	480 lbs.

EASTBOUND BRIGHTWOOD

The Brightwood scale is located on U.S. highway 26, 12 miles east of Sandy, Oregon. Traffic was surveyed at Brightwood on March 16, 17, 18, and again August 10, 11, 12, 1987 (Monday thru Wednesday).

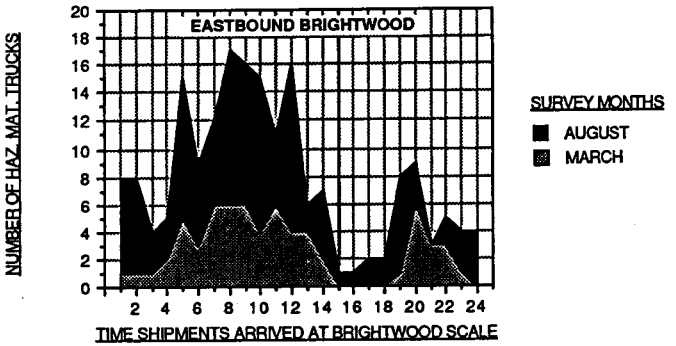
During the survey, total traffic averaged 242 trucks per 24-hour day, or 10 per hour. Hazardous material movements crossed this location at a rate of 31 per 24 hours, or 1.3 per hour.

A mix of 33 different hazardous materials were recorded in the Brightwood surveys. The most common commodities were flammables and combustibles (91 percent of all movements), primarily gasoline and diesel, and flammable gas (4 percent), solely liquefied petroleum gas.

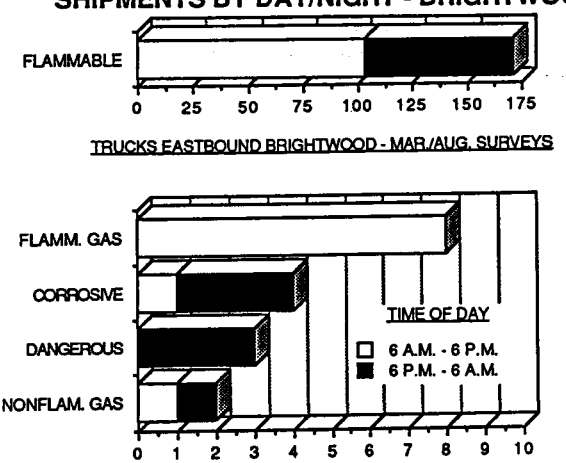
While some movements through Brightwood were serving nearby cities, more than half of the vehicles surveyed were destined for central Oregon. Most of the gasoline and diesel observed at Brightwood was destined for Madras (Jefferson County), Bend and Redmond (Deschutes County).

The volume of hazardous material traffic peaked from 8 a.m. - Noon. Though 60 percent of the placarded trucks arrived at the scale from 6 a.m. - 6 p.m., the slowest period of survey activity eastbound through Brightwood included several afternoon hours (3 p.m. - 7 p.m.).

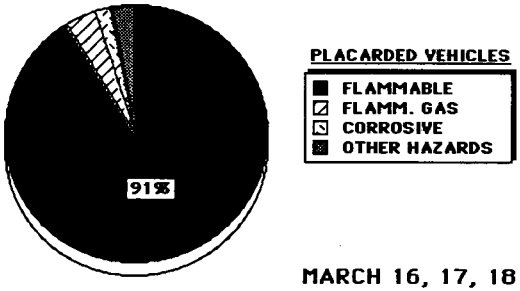
HAZ. MAT. SHIPMENTS BY HOUR OF DAY



SHIPMENTS BY DAY/NIGHT - BRIGHTWOOD



EASTBOUND BRIGHTWOOD
MARCH AND AUGUST SURVEYS



SCALE EAST BRIGHTWOOD SURVEY DATE MARCH 16, 17, 18 AUGUST 10, 11, 12, 1987

	MONDAY MAR. 16 / AUG. 10	TUESDAY MAR. 17 / AUG. 11	WEDNESDAY MAR. 18 / AUG. 12	TOTALS MAR. / AUG.
TOTAL TRUCK TRAFFIC	203 / 256	180 / 317	196 / 297	579 / 870
PLACARDED VEHICLES	20 / 38	22 / 41	23 / 44	65 / 123
% OF TOTAL TRAFFIC	9.9 / 14.8	12.2 / 12.9	11.7 / 14.8	11.2 / 14.1
FLAMMABLE	18 / 37	18 / 37	20 / 41	56 / 115
FLAMMABLE SOLID				
FLAMMABLE GAS		3 / 1	1 / 2	4 / 4
NONFLAMMABLE GAS		1 / 1		1 / 1
CORROSIVE	2 /	/ 1	1 /	3 / 1
OXIDIZER				
POISON				
DANGEROUS		/ 1	1 / 1	1 / 2
EXPLOSIVES				
RADIOACTIVE				
OTHER REGULATED MAT.				

ODOT/PUC HAZARDOUS MATERIAL SURVEY
Hazardous Material Shipments -- Commodity Specific

EASTBOUND BRIGHTWOOD
March / August Surveys
1

COMMODITY	UN/NA No.	No. of Shipments	Avg. Wt. or Vol.
Gasoline	UN1203	38 / 67	8,065 gal.
Paint, lacquer base	UN1263	3 / 1	2,877 lbs.
Paint related mat.	NA1263	/ 1	
Acetone	UN1090	1 /	2,000 lbs.
Cement	NA1133	/ 1	25 lbs.
Methyl alcohol	UN1230	/ 1	46 lbs.
Resin solution	UN1866	1 /	538 lbs.
Flammable liquid, preparations	UN1142	1 /	50 lbs.

COMMODITY	UN/NA No.	No. of Shipments	Avg. Wt. or Vol.
Fuel oil, diesel	NA1993	28 / 43	6,276 gal.
Combust. liq., n.o.s.	NA1993	/ 17	
Asphalt	NA1993	/ 1	58,080 lbs.
Paint	UN1263	/ 1	28 lbs.
Paint related mat.	NA1263	1 /	51 lbs.

COMMODITY	UN/NA No.	No. of Shipments	Avg. Wt. or Vol.
Liquefied petro. gas	UN1075	4 / 5	1,714 gal.

ODOT/PUC HAZARDOUS MATERIAL SURVEY
Hazardous Material Shipments -- Commodity Specific

EASTBOUND BRIGHTWOOD
March / August Surveys
2

COMMODITY	UN/NA No.	No. of Shipments	Avg. Weight or Volume
Helium	UN1046	1 /	100 lbs.
Helium, refrig. liq.	UN1963	1 /	964 lbs.
Oxygen, refrig. liq.	UN1073	/ 1	44,000 lbs.
Nitrogen, refrig. liq.	UN1977	1 /	42,000 lbs.
Compressed gas, n.o.s.	UN1956	/ 1	66 lbs.

COMMODITY	UN/NA No.	No. of Shipments	Avg. Weight or Volume
Methyl ethyl ketone peroxide	UN2550	1 /	525 lbs.

COMMODITY	UN/NA No.	No. of Shipments	Avg. Weight or Volume
Hydrogen peroxide solution	UN2014	/ 1	240 lbs.
Silver nitrate	UN1493	1 /	40 lbs.
Nitric acid	UN2031	/ 1	60 lbs.

ODOT/PUC HAZARDOUS MATERIAL SURVEY
Hazardous Material Shipments -- Commodity Specific

EASTBOUND BRIGHTWOOD
March / August Surveys
3

COMMODITY	UN/NA No.	No. of Shipments	Avg. Weight or Volume
Sodium hydroxide, liquid	UN1824	1 /	25,261 lbs.
Sodium hydroxide, dry	UN1823	1 / 1	158 lbs.
Sulfuric acid	UN1830	1 / 1	330 lbs.
Hydrofluoric acid, solution	UN1790	1 / 1	64 lbs.
Hydrochloric acid solution	UN1789	1 / 1	88 lbs.
Ammonia hydroxide	NA2672	1 / 1	35 lbs.
Compound, clean. liq.	NA1760	1 / 1	688 lbs.
Battery, wet w/acid	UN2794	/ 1	1,751 lbs.
Alkaline liquid, n.o.s.	NA1719	1 /	1,300 lbs.
Potassium hydroxide	UN1814	1 /	80 lbs.
Hypochlorite solution	UN1791	1 /	120 lbs.
Hydrofluoric/sulfuric acid mixture	UN1786	/ 1	545 lbs.
Corrosive solid, n.o.s.	UN1759	/ 1	135 lbs.

SOUTHBOUND DAYTON

The Dayton scale is located on Oregon highway 99W, north of Dayton Junction. Traffic was surveyed at Dayton on March 9, 10, 11, and again August 3, 4, 5, 1987 (Monday thru Wednesday).

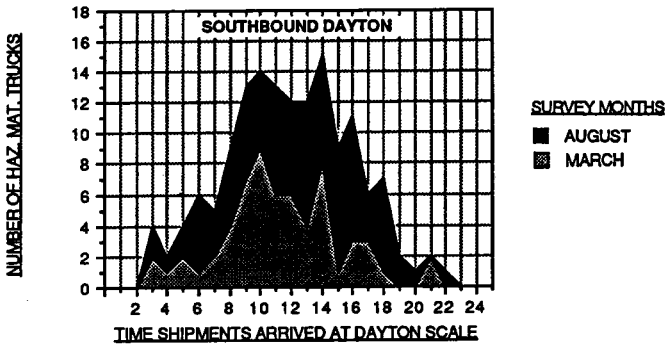
During the survey, total traffic averaged 500 trucks per 24-hour day, or 21 per hour. Hazardous material movements crossed this location at a rate of 25 per 24 hours, or 1 per hour.

A mix of 41 different materials were aboard the vehicles surveyed at Dayton. The most common commodities were flammables and combustibles (75 percent of total movements), primarily gasoline and diesel, and nonflammable gas (12 percent), particularly oxygen.

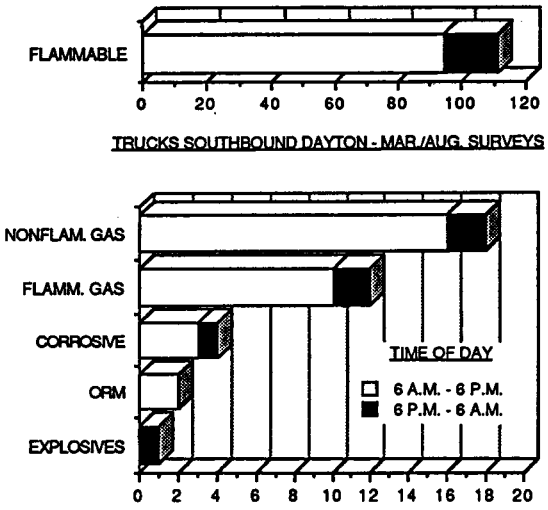
Fully 70 percent of vehicles surveyed southbound through Dayton were destined within Yamhill County, most with flammables and nonflammable gases for the city of McMinnville. One of every five movements, however, were delivering gasoline and diesel to Lincoln City and Newport on the coast in Lincoln County.

The volume of hazardous material traffic peaked between 9 a.m. and 2 p.m., with 84 percent of movements arriving at the scale between 6 a.m. and 6 p.m. Traffic southbound through Dayton was slowest from 8 p.m. - 3 a.m.

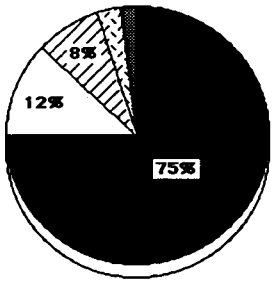
HAZ. MAT. SHIPMENTS BY HOUR OF DAY



SHIPMENTS BY DAY/NIGHT - DAYTON



SOUTHBOUND DAYTON
MARCH AND AUGUST SURVEYS



SCALE SOUTH DAYTON SURVEY DATE MARCH 9, 10, 11 AUGUST 3, 4, 5, 1987

	MONDAY MAR. 9 / AUG. 3	TUESDAY MAR. 10 / AUG. 4	WEDNESDAY MAR. 11 / AUG. 5	TOTALS MAR. / AUG.
TOTAL TRUCK TRAFFIC	501 / 508	496 / 480	473 / 541	1470 / 1529
PLACARDED VEHICLES	19 / 32	22 / 28	21 / 26	62 / 86
% OF TOTAL TRAFFIC	3.8 / 6.3	4.4 / 5.8	4.4 / 4.8	4.2 / 5.6
FLAMMABLE	16 / 25	17 / 20	14 / 19	47 / 64
FLAMMABLE SOLID				
FLAMMABLE GAS	1 / 3	1 / 5	/ 2	2 / 10
NONFLAMMABLE GAS	2 / 3	2 / 2	5 / 4	9 / 9
CORROSIVE		1 /	2 / 1	3 / 1
OXIDIZER				
POISON				
DANGEROUS				
EXPLOSIVES	/ 1			/ 1
RADIOACTIVE				
OTHER REGULATED MAT.		1 / 1		1 / 1

ODOT/PUC HAZARDOUS MATERIAL SURVEY
Hazardous Material Shipments -- Commodity Specific

SOUTHBOUND DAYTON
March / August Surveys
1

COMMODITY	UN/NA No.	No. of Shipments	Avg. Wt. or Vol.
Gasoline	UN1203	27 / 39	8,041 gal.
Paint, lacquer base	UN1263	3 /	
Acetone	UN1090	/ 2	206 gal.
Ketone	UN1224	1 /	
Toluene	UN1294	/ 1	165 gal.
Petroleum naphtha	NA1255	/ 1	165 gal.
Alcohol, n.o.s.	UN1987	1 /	
Compound, tree or weed killing, liquid	NA1993	1 /	4,400 gal.

COMMODITY	UN/NA No.	No. of Shipments	Avg. Wt. or Vol.
Fuel oil, diesel	NA1993	17 / 27	6,325 gal.
Fuel, aviation	UN1863	/ 1	
Paint related mat.	NA 1263	1 / 1	55 gal.
Petroleum naphtha	UN1255	1 / 1	
Petroleum oil	NA1270	1 /	8,500 gal.
Kerosene	UN1223	1 /	8,104 gal.
Coal tar distillate	UN1137	/ 1	6,000 gal.

COMMODITY	UN/NA No.	No. of Shipments	Avg. Wt. or Vol.
Liquefied petro. gas	UN1075	2 / 7	30 cu. ft.
Acetylene	UN1001	2 / 2	5,256 cu. ft.
Hydrogen	UN1049	1 / 1	760 cu. ft.

ODOT/PUC HAZARDOUS MATERIAL SURVEY
Hazardous Material Shipments -- Commodity Specific

SOUTHBOUND DAYTON
March / August Surveys
2

COMMODITY	UN/NA No.	No. of Shipments	Avg. Weight or Volume
Oxygen	UN1072	5 / 4	9,709 cu. ft.
Oxygen, refrig. liq.	UN1073	5 / 5	557,500 cu. ft.
Nitrous oxide	UN1070	3 / 2	
Nitrogen	UN1066	1 / 1	651 cu. ft.
Nitrogen, refrig. liq.	UN1977	/ 2	6,600 gal.
Carbon dioxide	UN1013	2 / 1	280 cu. ft.
Carbon dioxide, ref.	UN2187	/ 1	
Argon	UN1006	3 /	1,162 cu. ft.
Helium	UN1046	2 /	233 cu. ft.
Compressed gas, n.o.s.	UN1956	1 / 1	3,573 cu. ft.
Chlorine	UN1017	/ 1	
Sulfur dioxide	UN1079	/ 1	

COMMODITY	UN/NA No.	No. of Shipments	Avg. Weight or Volume
Compound, clean., liq.	NA1760	2 /	491 lbs.
Sulfuric acid	UN1830	2 /	51,500 lbs.
Sodium hydroxide, liquid	UN1824	1 /	
Sodium hydroxide, dry	UN1823	1 /	536 lbs.
Ammonia hydroxide	NA2672	/ 1	25,160 lbs.
Ammonium hydrogen fluoride	UN1727	1 /	

ODOT/PUC HAZARDOUS MATERIAL SURVEY
Hazardous Material Shipments -- Commodity Specific

SOUTHBOUND DAYTON
March / August Surveys
3

	COMMODITY	UN/NA No.	No. of Shipments	Avg. Weight or Volume
	High explosive		/ 1	

ORM

	COMMODITY	UN/NA No.	No. of Shipments	Avg. Weight or Volume
A	Trichloroethane	UN2831	1 /	
B	Aluminum sulfate solution	NA1760	/ 1	44,000 lbs.
	Hypochlorite solution	NA1791	/ 1	
E	Ammonium thiosulfate	NA9093	1 /	55,940 lbs.

SOUTHBOUND HUBBARD

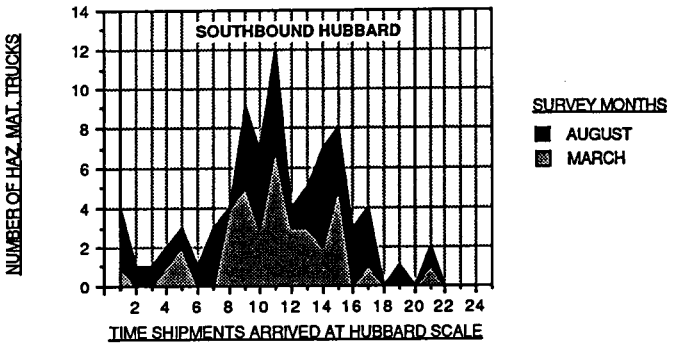
The Hubbard scale is located on Oregon highway 99E, one mile north of Hubbard. Traffic was surveyed at Hubbard on March 16, 17, 18, and again August 10, 11, 12, 1987 (Monday thru Wednesday).

During the survey, total traffic averaged 358 trucks per 24-hour day, or 15 per hour. Hazardous material movements crossed this location at a rate of 14 per 24 hours, or .6 per hour.

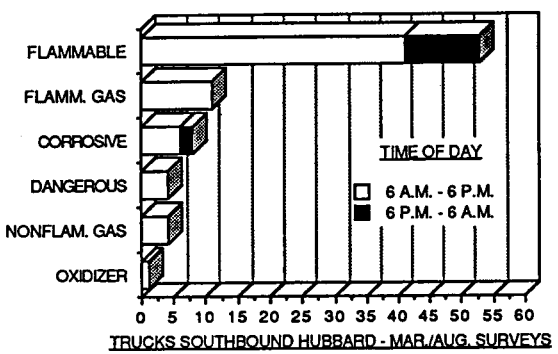
A mix of 35 different hazardous materials were recorded at Hubbard. The most common commodities were flammables and combustibles (65 percent of total movments, primarily gasoline and diesel, and flammable gas (14 percent), largely liquified petroleum gas. Fully 80 percent of movements surveyed through Hubbard were serving cities in Marion County.

The volume of hazardous material traffic peaked between 9 a.m. and 3 p.m., with 83 percent of the movements arriving at the scale from 6 a.m. - 6 p.m. The slowest period of activity southbound through Hubbard was from 6 p.m. - Midnight.

HAZ. MAT. SHIPMENTS BY HOUR OF DAY

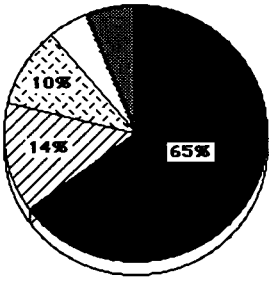


SHIPMENTS BY DAY/NIGHT - HUBBARD



SOUTHBOUND HUBBARD

MARCH AND AUGUST SURVEYS



SCALE SOUTH HUBBARD

SURVEY DATE MARCH 16, 17, 18
AUGUST 10, 11, 12, 1987

	MONDAY MAR. 16 / AUG. 10	TUESDAY MAR. 17 / AUG. 11	WEDNESDAY MAR. 18 / AUG. 12	TOTALS MAR. / AUG.
TOTAL TRUCK TRAFFIC	357 / 377	365 / 370	341 / 340	1063 / 1087
PLACARDED VEHICLES	15 / 15	14 / 13	9 / 15	38 / 43
% OF TOTAL TRAFFIC	4.2 / 4.0	3.8 / 3.5	2.6 / 4.4	3.6 / 3.9
FLAMMABLE	12 / 9	8 / 9	6 / 9	26 / 27
FLAMMABLE SOLID				
FLAMMABLE GAS	2 / 2	2 / 2	1 / 2	5 / 6
NONFLAMMABLE GAS	/ 2	2 /		2 / 2
CORROSIVE	1 /	1 / 2	1 / 3	3 / 5
OXIDIZER	/ 1			/ 1
POISON				
DANGEROUS	/ 1	1 /	1 / 1	2 / 2
EXPLOSIVES				
RADIOACTIVE				
OTHER REGULATED MAT.				

ODOT/PUC HAZARDOUS MATERIAL SURVEY
Hazardous Material Shipments -- Commodity Specific

SOUTHBOUND HUBBARD
March / August Surveys
1

COMMODITY	UN/NA No.	No. of Shipments	Avg. Wt. or Vol.
Gasoline	UN1203	15 / 16	7,331 gal.
Paint, lacquer base	UN1263	3 / 1	
Paint related mat.	NA1263	/ 1	945 lbs.
Resin solution	UN1866	1 / 2	4,077 lbs.
Petroleum naphtha	UN1255	1 /	275 lbs.
Acetone	UN1090	/ 1	403 lbs.
Flammable liq., n.o.s.	UN1993	1 /	782 lbs.

COMMODITY	UN/NA No.	No. of Shipments	Avg. Wt. or Vol.
Fuel oil, diesel	NA1993	11 / 10	5,937 gal.
Combust. liq., n.o.s.	NA 1993	/ 2	
Paint related mat.	NA 1263	1 /	330 lbs.
Asphalt	NA1993	/ 1	8,750 gal.

COMMODITY	UN/NA No.	No. of Shipments	Avg. Wt. or Vol.
Liquefied petro. gas	UN1075	2 / 5	7,600 lbs.
Acetylene	UN1001	2 / 2	2,192 lbs.
Hydrogen	UN1049	2 /	
Compressed gas, n.o.s.	UN1954	1 /	

ODOT/PUC HAZARDOUS MATERIAL SURVEY
Hazardous Material Shipments -- Commodity Specific

SOUTHBOUND HUBBARD
March / August Surveys
2

COMMODITY	UN/NA No.	No. of Shipments	Avg. Weight or Volume
Oxygen	UN1072	4 / 3	9,135 lbs.
Oxygen, refrig. liq.	UN1073	2 / 1	
Argon	UN1006	3 / 3	2,136 lbs.
Helium	UN1046	3 / 1	
Carbon dioxide	UN1013	2 / 2	2,700 lbs.
Compressed gas, n.o.s.	UN1956	2 / 2	2,360 lbs.
Nitrogen	UN1066	1 / 1	
Nitrogen, ref.. liquid	UN1977	/ 1	
Nitrous oxide	UN1070	1 /	
Ammonia, anhydrous	UN1005	1 /	1,200 lbs.
Air, compressed	UN1002	1 /	

COMMODITY	UN/NA No.	No. of Shipments	Avg. Weight or Volume
Methyl ethyl ketone peroxide	UN2550	1 / 1	70 lbs.

COMMODITY	UN/NA No.	No. of Shipments	Avg. Weight or Volume
Sodium chlorate	UN1495	/ 1	330 lbs.
Sodium chlorite	UN1496	/ 1	7,656 lbs.
Ammonium nitrate fertilizer	UN2067	/ 1	2,000 lbs.

ODOT/PUC HAZARDOUS MATERIAL SURVEY
Hazardous Material Shipments -- Commodity Specific

SOUTHBOUND HUBBARD
March / August Surveys
3

	COMMODITY	UN/NA No.	No. of Shipments	Avg. Weight or Volume
	Sodium hydroxide, liquid	UN1824	2 / 3	25,771 lbs.
	Battery, wet w/acid	UN2794	2 / 3	21,516 lbs.
	Sulfuric acid	UN1830	2 / 1	2,079 lbs.
	Hypochlorite solution	UN1791	1 /	575 lbs.
	Hydrochloric acid, solution	UN1789	/ 1	440 lbs.

	COMMODITY	UN/NA No.	No. of Shipments	Avg. Weight or Volume
A	Trichloroethane	UN2831	1 / 1	398 lbs.
	Perchloroethylene	UN1897	1 /	300 lbs.

WESTBOUND TILLAMOOK

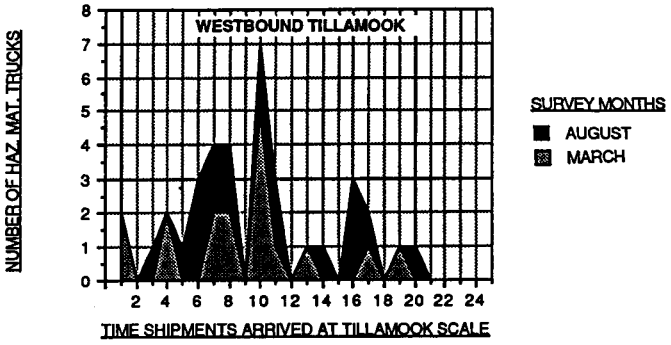
The Tillamook scale is located on Oregon highway 6, two miles east of Tillamook. Traffic was surveyed at Tillamook on March 16, 17, 18, and again August 10, 11, 12, 1987 (Monday thru Wednesday).

During the survey, total traffic averaged 123 trucks per 24-hour day, or 5 per hour. Hazardous material movements crossed this location at a rate of 6 per 24 hours, or .3 per hour.

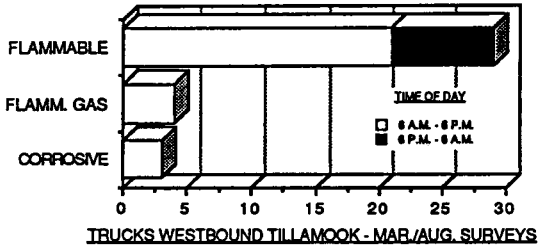
A mix of only 8 different hazardous materials were recorded at Tillamook. Gasoline and diesel were aboard 29 of the 36 vehicles surveyed (81 percent of the total movements).

The limited volume of hazardous material traffic through Tillamook peaked at 10 a.m. (7 trucks). A total of 78 percent of all movements arrived from 6 a.m. - 6 p.m.

HAZ. MAT. SHIPMENTS BY HOUR OF DAY



SHIPMENTS BY DAY/NIGHT - TILLAMOOK



WESTBOUND TILLAMOOK
MARCH AND AUGUST SURVEYS

SCALE WEST TILLAMOOK SURVEY DATE MARCH 16, 17, 18 AUGUST 10, 11, 12, 1987

	MONDAY MAR. 16 / AUG. 10	TUESDAY MAR. 17 / AUG. 11	WEDNESDAY MAR. 18 / AUG. 12	TOTALS MAR. / AUG.
TOTAL TRUCK TRAFFIC	108 / 128	128 / 156	113 / 106	349 / 390
PLACARDED VEHICLES	3 / 4	6 / 5	8 / 10	17 / 19
% OF TOTAL TRAFFIC	2.8 / 3.1	4.7 / 3.2	7.1 / 9.4	4.9 / 4.9
FLAMMABLE	3 / 3	4 / 5	6 / 8	13 / 16
FLAMMABLE SOLID				
FLAMMABLE GAS	/ 1	2 /	/ 1	2 / 2
NONFLAMMABLE GAS				
CORROSIVE			2 / 1	2 / 1
OXIDIZER				
POISON				
DANGEROUS				
EXPLOSIVES				
RADIOACTIVE				
OTHER REGULATED MAT.				

ODOT/PUC HAZARDOUS MATERIAL SURVEY
Hazardous Material Shipments -- Commodity Specific

WESTBOUND TILLAMOOK
March / August Surveys
1

COMMODITY	UN/NA No.	No. of Shipments	Avg. Wt. or Vol.
Gasoline	UN1203	7 / 10	9,894 gal.

Fuel oil, diesel	NA1993	6 / 7	6,992 gal.

Liquefied petro. gas	UN1075	1 / 1	9,175 gal.
Acetylene	UN1001	1 / 1	

Oxygen	UN1072	/ 1	
Helium	UN1046	/ 1	

Battery, wet w/acid	UN2794	1 / 1	6,350 lbs.
Sodium hydrox., liq.	UN1824	1 /	38,280 lbs.

ASHLAND PORT-OF-ENTRY

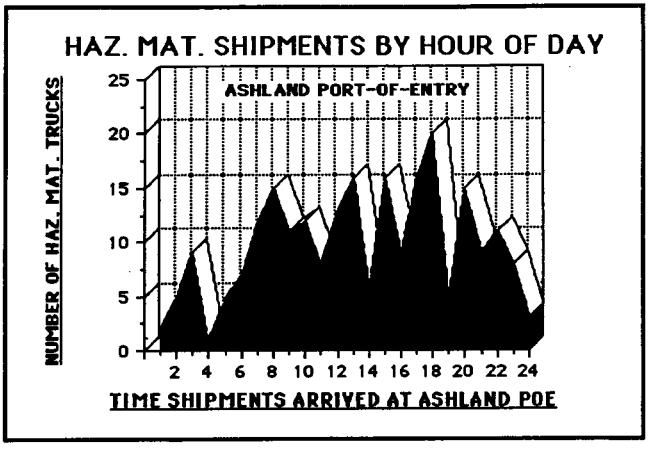
The Ashland port-of-entry is located two miles north of Ashland on Interstate 5. Northbound hazard-placarded trucks were surveyed at this entry port on November 17, 18, 19, 1987, Tuesday thru Thursday.

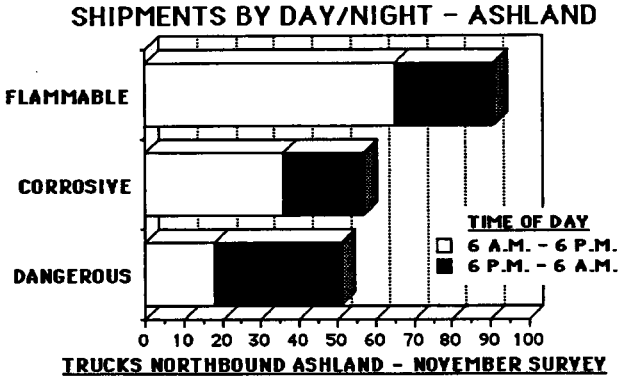
Total traffic across the scale averaged 1,678 trucks per 24-hour day, 70 per hour. Hazardous material-placarded vehicles within that total averaged 78 per 24-hour day, 3 per hour (4.7 percent). Surveying traffic here tracks movements entering the state from the south, but does not include shipments terminating in the city of Ashland.

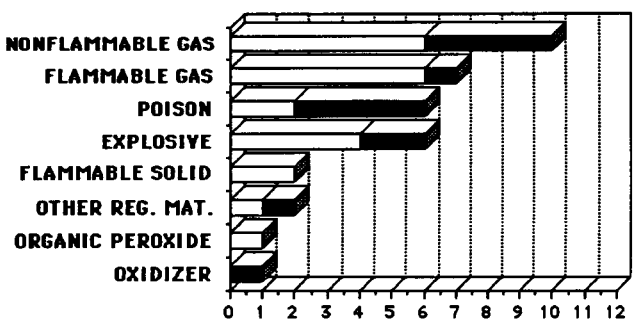
A total of 124 different hazardous materials were recorded in the three- day survey period. Some of the more common materials transported were paint and paint related material (often with destinations in Washington state), corrosive liquids (generally bound for northern Oregon and beyond), and gasoline and fuel oil, diesel (most from Chico, Ca. to Medford).

While six of every ten trucks surveyed through Ashland served Oregon cities along the way, a large percentage carried shipments destined for another state. Fully 109 of the 234 placarded-vehicles eventually exited Oregon (all but two destined for Washington). Trucks passing through Oregon included 32 percent of the FLAMMABLE-placarded ones, 55 percent of DANGEROUS, and 58 percent of CORROSIVE trucks. The transience of shipments surveyed through Ashland exposes counties along the entire Interstate 5 route to 70-80 percent of all hazardous materials entering the state from the south.

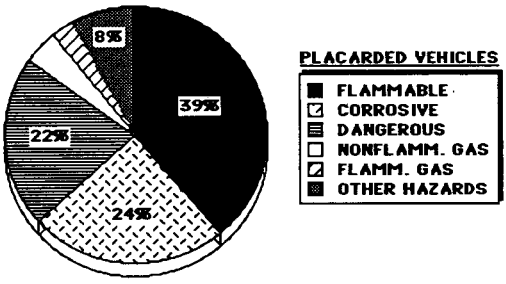
The flow of hazardous material traffic surveyed is concentrated between 7 a.m. and 10 p.m., when 194 of the 234 vehicles arrived at the Ashland scale.


HAZ. MAT. SHIPMENTS BY HOUR OF DAY
ASHLAND PORT-OF-ENTRY
NUMBER OF HAZ. MAT. TRUCKS
25
20
15
10
5
0
2 4 6 8 10 12 14 16 18 20 22 24
TIME SHIPMENTS ARRIVED AT ASHLAND POE


SHIPMENTS BY DAY/NIGHT - ASHLAND
FLAMMABLE
CORROSIVE
DANGEROUS
TIME OF DAY
6 A.M. - 6 P.M.
6 P.M. - 6 A.M.
0 10 20 30 40 50 60 70 80 90 100
TRUCKS NORTHBOUND ASHLAND - NOVEMBER SURVEY


NONFLAMMABLE GAS
FLAMMABLE GAS
POISON
EXPLOSIVE
FLAMMABLE SOLID
OTHER REG. MAT.
ORGANIC PEROXIDE
OXIDIZER
0 1 2 3 4 5 6 7 8 9 10 11 12

ASHLAND PORT-OF-ENTRY



SCALE ASHLAND PORT-OF-ENTRY SURVEY DATE NOVEMBER 17,18,19, 1987

	NOVEMBER 17 TUESDAY	NOVEMBER 18 WEDNESDAY	NOVEMBER 19 THURSDAY	SURVEY TOTALS
TOTAL TRUCK TRAFFIC	1,665	1,664	1,705	5,034
PLACARDED VEHICLES % OF TOTAL TRAFFIC	61 3.7%	83 5.0%	90 5.3%	234 4.7%
FLAMMABLE	31	28	32	91
FLAMMABLE SOLID	1		1	2
FLAMMABLE GAS	1	3	3	7
NONFLAMMABLE GAS	2	5	3	10
CORROSIVE	16	23	18	57
OXIDIZER			1	1
POISON		2	4	6
DANGEROUS	9	20	22	51
EXPLOSIVES		1	5	6
RADIOACTIVE				
OTHER REGULATED MAT.	1	1		2
ORGANIC PEROXIDE			1	1

ODOT/PUC HAZARDOUS MATERIAL SURVEY
Hazardous Material Shipments -- Commodity Specific

ASHLAND PORT-OF-ENTRY
Survey Activity - November 17, 18, 19, 1987
1

COMMODITY	UN/NA No.	No. of Shipments	Avg. Wt. or Vol.	Container Types
Paint, lacquer base	UN1263	33	5,103 lbs.	a d p
Paint related mat.	NA1263	24	2,133 lbs.	p t
Resin solution	UN1866	20	16,607 lbs.	a b d p t
Flammable liq., n.o.s.	UN1993	19	4,878 lbs.	a b d p t
Gasoline	UN1203	17	7,544 gal.	t
Isopropanol	UN1219	10	533 lbs.	a b p
Methyl alcohol	UN1230	10	2,607 lbs.	a d p t
Compound, clean. liq.	NA1993	8	1,411 lbs.	a d p
Cement	NA1133	8	1,099 lbs.	a d p
Adhesive	UN1133	3	2,546 lbs.	d p
Petroleum naphtha	UN1255	5	19,051 lbs.	p t
Acetone	UN1090	5	1,720 lbs.	p t
Methyl ethyl ketone	UN1193	4	3,839 lbs.	p t
Denatured alcohol	NA1986	3	113 lbs.	b p
Toluene	UN1294	3	113 lbs.	p
Alcohol, n.o.s.	UN1987	2	32 lbs.	b p
Propyl alcohol	UN1274	2	8,610 lbs.	a d p t
Petroleum ether	UN1271	2	161 lbs.	b p
Ethyl ether	UN1155	2	46 lbs.	p
Ethyl acetate	UN1173	2	46 lbs.	p
Tetrahydrofuran	UN2056	2	118 lbs.	p
Styrene monomer, inhibited	UN2055	2	59 lbs.	a p
Propyl acetate	UN1276	1	8,540 lbs.	t
Methyl methacrylate monomer, inhibited	UN1247	1	5,652 lbs.	d
Compound, weed killing liquid	NA1993	1	4,320 lbs.	a
Ethylene oxide	UN1040	1	2,640 lbs.	d
Cyclohexylamine	UN2357	1	1,708 lbs.	p
Ink	UN1210	1	1,019 lbs.	d
Xylene	UN1307	1	216 lbs.	p
Turpentine	UN1299	1	196 lbs.	p
Heptane	UN1206	1	80 lbs.	d
Benzine	UN1115	1	43 lbs.	p
Cyclohexane	UN1145	1	12 lbs.	p
Butyl acetate	UN1123	1	6 lbs.	p
Butyl alcohol	NA1120	1	3 lbs.	a

Container Types:
a = can or pail b = bottle c = cylinder d = drum
p = package (case, carton, box) t = tank

ODOT/PUC HAZARDOUS MATERIAL SURVEY
Hazardous Material Shipments -- Commodity Specific

ASHLAND PORT-OF-ENTRY
Survey Activity - November 17, 18, 19, 1987
2

COMMODITY	UN/NA No.	No. of Shipments	Avg. Wt. or Vol.	Container Types
Fuel oil, diesel	NA 1993	1 3	6,299 gal.	t
Paint	UN1263	6	5,198 lbs.	a p t
Paint related mat.	NA1263	1	450 lbs.	d
Combustible liq., n.o.s.	NA1993	5	12,158 lbs.	d p t
Compound, clean., liq.	NA1993	1	5,619 lbs.	d p
Petroleum oil, n.o.s.	NA1270	1	839 lbs.	p
Petroleum distillate	UN1268	1	180 lbs.	p
Formaldehyde solut.	UN2209	1	8 lbs.	p

COMMODITY	UN/NA No.	No. of Shipments	Avg. Wt. or Vol.	Container Types
Fusee	NA1325	2	6,559 lbs.	p

COMMODITY	UN/NA No.	No. of Shipments	Avg. Wt. or Vol.	Container Types
Liquefied petrol. gas	UN1075	4	2,127 lbs.	a c
Engine starting fluid	UN1960	3	75 lbs.	a p
Cigarette lighters	UN1057	2	469 lbs.	p
Hydrogen, refrig. liq.	UN1966	2	12,750 gal.	t
Compressed gas., n.o.s.	UN1954	1	1,400 lbs.	a
Difluoroethane	UN1030	1	25 lbs.	a

Container Types:
a = can or pail b = bottle c = cylinder d = drum
p = package (case, carton, box) t = tank

ODOT/PUC HAZARDOUS MATERIAL SURVEY
Hazardous Material Shipments -- Commodity Specific

ASHLAND PORT-OF-ENTRY
Survey Activity - November 17, 18, 19, 1987
3

COMMODITY	UN/NA No.	No. of Shipments	Avg. Wt. or Vol.	Container Types
Compressed gas, n.o.s.	UN1956	7	1,563 lbs.	c t
Helium	UN1046	4	13,906 lbs.	c
Helium, refrig. liq.	UN1963	1	1,000 lbs.	t
Dichlorodifluoro-methane	UN1028	2	114 lbs.	p
Fire extinguisher	UN1044	2	736 lbs.	p
Refrigerant gas, n.o.s.	UN1078	1	1,190 lbs.	a
Carbon dioxide	UN1013	1	1,055 lbs.	p
Argon, refrig. liq.	UN1951	1	3,800 lbs.	t
Bromotrifluoro-methane	UN1009	1	3,450 lbs.	t
Nitrogen, refrig. liq.	UN1977	1		c
Accumulator, pressurized	NA1956	1	13 lbs.	p
Oxygen	UN1072	1		

COMMODITY	UN/NA No.	No. of Shipments	Avg. Wt. or Vol.	Container Types
Organic peroxide, liquid, n.o.s.	NA9183	1	1,530 lbs.	
Methyl ethyl ketone peroxide	UN2550	1	3,060 lbs.	p

Container Types:
a = can or pail b = bottle c = cylinder d = drum
p = package (case, carton, box) t = tank

ODOT/PUC HAZARDOUS MATERIAL SURVEY
Hazardous Material Shipments -- Commodity Specific

ASHLAND PORT-OF-ENTRY
Survey Activity - November 17, 18, 19, 1987
4

COMMODITY	UN/NA No.	No. of Shipments	Avg. Wt. or Vol.	Container Types
Hydrogen peroxide solution	UN2014	5	2,818 lbs.	d p
Nitric acid	UN2031	5	7,665 lbs.	b p t
Potassium permanganate	UN1490	2	587 lbs.	p
Sodium dichloro-s-triazinetrione	UN2465	1	190 lbs.	p
Calcium hypochlorite, hydrated	UN2880	1	157 lbs.	p
Trichloroiso-cyanuric acid, dry	UN2468	1	86 lbs.	p
Zinc nitrate	UN1514	1	27 lbs.	p
Silver nitrate	UN1493	1	1 lb.	p
Oxidizer, n.o.s.	UN1479	1	2 lbs.	p

COMMODITY	UN/NA No.	No. of Shipments	Avg. Wt. or Vol.	Container Types
Poison B, liquid, n.o.s.	UN2810	2	36,530 lbs.	d p
Phenol	UN1671	2	23,023 lbs.	p t
Arsenic acid, solution	UN1553	1	45,700 lbs.	t
Toluene, diisocyanate	UN2078	1	43,660 lbs.	t
Methyl bromide, liq.	UN1062	1	1,860 lbs.	c
Methyl bromide and gas mixture, liquid	NA1955	1	400 lbs.	c
Poisonous solid, n.o.s.	UN2811	1	14 lbs.	p
Chloropicrin and gas mixture	NA1955	1	2,000 lbs.	c

Container Types:
a = can or pail b = bottle c = cylinder d = drum
p = package (case, carton, box) t = tank

ODOT/PUC HAZARDOUS MATERIAL SURVEY
Hazardous Material Shipments -- Commodity Specific

ASHLAND PORT-OF-ENTRY
Survey Activity - November 17, 18, 19, 1987
5

COMMODITY	UN/NA No.	No. of Shipments	Avg. Wt. or Vol.	Container Types
Corrosive liquid, n.o.s.	UN1760	25	6,504 lbs.	a b d p
Compound, clean., liq.	NA1760	25	2,224 lbs.	a b d p
Battery, wet w/acid	UN2794	19	7,709 lbs.	p
Battery fluid, acid	UN2796	2	897 lbs.	p
Corrosive solid, n.o.s.	UN1759	11	4,254 lbs.	d p
Sodium hydroxide, liquid	UN1824	9	15,732 lbs.	d p t
Sodium hydroxide, dry	UN1823	4	3,700 lbs.	a d p
Alkaline liquid, n.o.s.	NA1719	9	3,014 lbs.	d p
Hypochlorite solution	UN1791	7	1,816 lbs.	d p
Hydrochloric acid, solution	UN1789	7	1,860 lbs.	b p
Sulfuric acid	UN1830	6	959 lbs.	p
Potassium hydroxide, liquid	UN1814	5	3,151 lbs.	p
Acid, liquid, n.o.s.	NA1760	4	3,573 lbs.	b p
Hydrofluoric acid, solution	UN1790	3	28,065 lbs.	p t
Acetic acid, solution	UN2790	3	672 lbs.	p
Acetic acid, glacial	UN2789	2	745 lbs.	p
Compound, rust preventing or removing	NA1760	3	3,616 lbs.	d p
Compound, clean., liq.	NA1789	2	41 lbs.	p
Compound, clean., liq.	NA1790	2	414 lbs.	p
Phosphoric acid	UN1805	2	1,192 lbs.	a p
Ammonium hydroxide	NA2672	2	21,106 lbs.	p t
Tetramethylammonium hydroxide, liq.	UN1835	1	1,545 lbs.	p
Dodecylbenzenesulfonic acid	NA2584	1	490 lbs.	d
Hydrofluorosilicic acid	NA1778	1	130 lbs.	d
Formic acid	UN1779	1	141 lbs.	
Corrosive liquid, poisonous, n.o.s.	UN2922	1	2,360 lbs.	a

Container Types:
a = can or pail b = bottle c = cylinder d = drum
p = package (case, carton, box) t = tank

ODOT/PUC HAZARDOUS MATERIAL SURVEY
Hazardous Material Shipments -- Commodity Specific

ASHLAND PORT-OF-ENTRY
Survey Activity - November 17, 18, 19, 1987
6

	COMMODITY	UN/NA No.	No. of Shipments	Avg. Wt. or Vol.	Container Types
	Explosive power device		4	17,213 lbs.	p
	Detonators		3	217 lbs.	
	High explosive		1	2,340 lbs.	
	Rocket ammunition, w/inert, loaded projectile		1	3,352 lbs.	p
	Rocket ammunition, w/explosive projectile		1	1,190 lbs.	p
	Rocket motor		1	45 lbs.	p
	Small arms ammunition		1		p
	Oil well cartridge		1		
	Blasting agent, n.o.s.		1	41,354 lbs.	

	Radioactive material, special form	UN2974	1	545 lbs.	p
	Radioactive material	UN2911	2	4 lbs.	p

A	Trichloroethane	UN2831	2	1,013 lbs.	p t
	Perchloroethylene	UN1897	1	2,000 gal.	t
B	Ammonium fluoride	UN2505	1	1,120 lbs.	p
D	Consumer commodity		4	249 lbs.	a p
E	Hazardous sub., n.o.s.	NA9188	1		d
	Sodium phosphate, tribasic	NA9148	1		p

Container Types:
a = can or pail b = bottle c = cylinder d = drum
p = package (case, carton, box) t = tank

KLAMATH FALLS PORT-OF-ENTRY

The Klamath Falls port-of-entry is located one mile north of Klamath Falls on U.S. 97. Northbound hazard-placarded trucks were surveyed at this entry port on November 17, 18, 19, 1987, Tuesday thru Thursday.

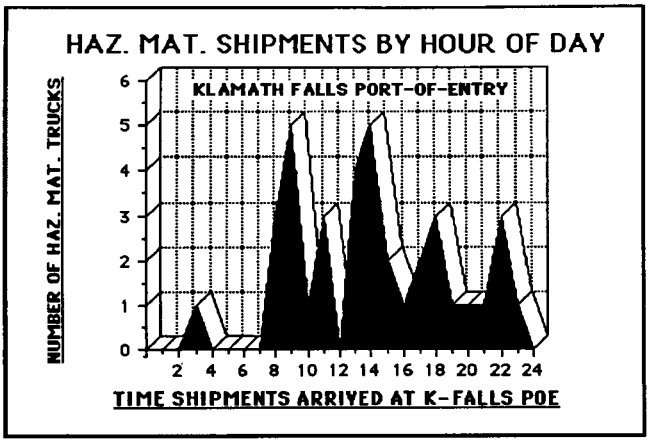
Total traffic across the scale averaged 602 trucks per 24-hour day, 25 per hour. Hazardous material-placarded vehicles within that total averaged 12 per 24-hour day, 1 every 2 hours (2.1 percent). Surveying traffic here tracks movements entering the state and northbound on U.S. 97, but excludes shipments terminating in Klamath Falls, itself.

A total of 42 different hazardous materials were recorded in the three-day survey period. Paint and, or paint related material appeared on shipping papers 11 times, aboard 7 of the 37 trucks surveyed (4 from Sparks, Nv.). Another 6 trucks carried gasoline and, or diesel for delivery within Klamath county (5 of them originated in Klamath).

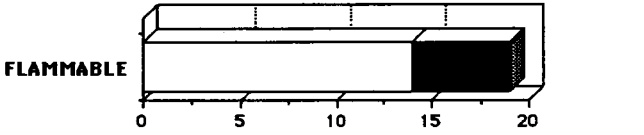
Flammables were the dominant hazard here, more so if the number of empty tankers are counted. An additional 28 FLAMMABLE-placarded vehicles were northbound on U.S. 97 with only traces of gas or diesel. The trucks were all destined for a gasoline/diesel pipeline terminus at Eugene. Of the 28 tankers, 23 were moving from Klamath Falls to Eugene (then returning fully loaded) and 5 were from Eugene (returning empty having served Klamath Falls). Though traces of flammable liquids are potentially dangerous, and of interest to emergency responders, the 28 trucks are included only as a footnote in the movement of hazardous materials through this site.

Materials transported through Klamath Falls served 20 Oregon cities in 8 counties. Of the 37 surveyed vehicles, 15 were routed north via S.R. 58 onto Interstate 5 at Eugene and 10 traveled north via U.S. 97 through Deschutes, Jefferson, Wasco and Sherman counties to Interstate 84. A total of 19 trucks were destined outside Oregon, 17 to Washington and 2 to Idaho.

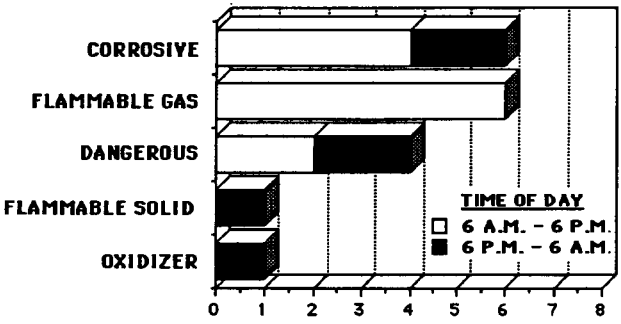
The flow of hazardous material traffic surveyed is concentrated between 8 a.m. and 6 p.m., when 78 percent of the shipments arrived at the Klamath Falls scale.



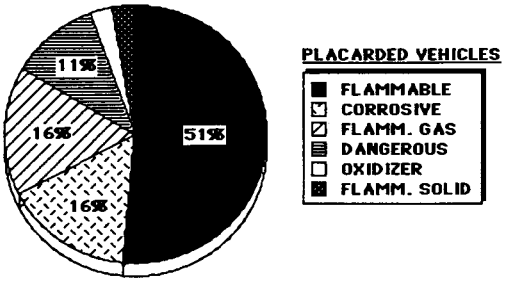
SHIPMENTS BY DAY/NIGHT - KLAMATH FALLS



TRUCKS NORTHBOUND KLAMATH FALLS - NOVEMBER SURVEY



KLAMATH FALLS PORT-OF-ENTRY



SCALE KLAMATH FALLS POE SURVEY DATE NOVEMBER 17,18,19, 1987

	NOVEMBER 17 TUESDAY	NOVEMBER 18 WEDNESDAY	NOVEMBER 19 THURSDAY	SURVEY TOTALS
TOTAL TRUCK TRAFFIC	555	618	632	1,805
PLACARDED VEHICLES % OF TOTAL TRAFFIC	14 2.5%	15 2.4%	8 1.3%	37 2.1%
FLAMMABLE	8	5	6	19
FLAMMABLE SOLID		1		1
FLAMMABLE GAS	2	4		6
NONFLAMMABLE GAS				
CORROSIVE	2	3	1	6
OXIDIZER			1	1
POISON				
DANGEROUS	2	2		4
EXPLOSIVES				
RADIOACTIVE				
OTHER REGULATED MAT.				
ADDITIONAL VEHICLES, FLAMMABLE-PLACARDED, RETURNING EMPTY	8	9	11	28

ODOT/PUC HAZARDOUS MATERIAL SURVEY
Hazardous Material Shipments -- Commodity Specific

KLAMATH FALLS PORT-OF-ENTRY
Survey Activity - November 17, 18, 19, 1987
1

COMMODITY	UN/NA No.	No. of Shipments	Avg. Wt. or Vol.	Container Types
Paint, lacquer base	UN1263	7	5,117 lbs.	a d p
Paint related mat.	NA1263	4	706 lbs.	a p
Resin solution	UN1866	3	15,339 lbs.	p t
Acetone	UN1090	3	19,308 lbs.	t
Methyl ethyl ketone	UN1193	3	8,709 lbs.	a t
Adhesive	UN1133	3	14,924 lbs.	d p
Toluene	UN1294	3	162 lbs.	a d p
Gasoline	UN1203	2	4,806 gal.	t
Flammable liq., n.o.s.	UN1993	2	3,394 lbs.	p t
Isopropanol	UN1219	2	14,310 lbs.	t
Alcohol, n.o.s.	UN1987	2	14,318 gal.	t
Compound, polishing, liquid	NA1142	1	96 lbs.	p
Turpentine	UN1299	1	67 lbs.	p
Coating solution	UN1139	1	200 lbs.	a
Xylene	UN1307	1	33 lbs.	p
Crude oil, petroleum	UN1267	1	3,400 gal.	t
Flammable liquid, corrosive, n.o.s.	UN2924	1	36 lbs.	p
Flammable liquid, preparations	UN1142	1	160 lbs.	p

COMMODITY	UN/NA No.	No. of Shipments	Avg. Wt. or Vol.	Container Types
Fuel oil, diesel	NA 1993	5	3,030 gal.	t

Container Types:
a = can or pail b = bottle c = cylinder d = drum
p = package (case, carton, box) t = tank

ODOT/PUC HAZARDOUS MATERIAL SURVEY
Hazardous Material Shipments -- Commodity Specific

KLAMATH FALLS PORT-OF-ENTRY
Survey Activity - November 17, 18, 19, 1987
2

COMMODITY	UN/NA No.	No. of Shipments	Avg. Wt. or Vol.	Container Types
Matches, strike anywhere	UN1331	1	4,830 lbs.	p

COMMODITY	UN/NA No.	No. of Shipments	Avg. Wt. or Vol.	Container Types
Liquefied petrol. gas	UN1075	4	1,591 lbs.	p t
Acetylene	UN1001	2	1,228 cu. ft.	c
Compressed gas, n.o.s.	UN1954	1	1,400 lbs.	p

COMMODITY	UN/NA No.	No. of Shipments	Avg. Wt. or Vol.	Container Types
Oxygen	UN1072	2	2,113 cu. ft.	c
Carbon dioxide, refrigerated	UN2187	1	50 lbs.	c
Nitrogen	UN1066	1	250 lbs.	c
Argon	UN1006	1	500 cu. ft.	c
Nitrous oxide	UN1070	1	45 cu. ft.	c

Container Types:
a = can or pail b = bottle c = cylinder d = drum
p = package (case, carton, box) t = tank

ODOT/PUC HAZARDOUS MATERIAL SURVEY
Hazardous Material Shipments -- Commodity Specific

KLAMATH FALLS PORT-OF-ENTRY
Survey Activity - November 17, 18, 19, 1987
3

COMMODITY	UN/NA No.	No. of Shipments	Avg. Wt. or Vol.	Container Types
Hydrogen peroxide solution	UN2014	1	42,000 lbs.	t
Chromic acid mix., dry	NA1463	1	12 lbs.	p

COMMODITY	UN/NA No.	No. of Shipments	Avg. Wt. or Vol.	Container Types
Battery, wet w/acid	UN2794	2	6,980 lbs.	p
Battery fluid, acid	UN2796	1	90 lbs.	p
Phosphoric acid	UN1805	2	45,825 lbs.	t
Hydrochloric acid, solution	UN1789	2	63 lbs.	p
Compound, clean., liq.	NA1760	2	793 lbs.	a p
Sodium hydroxide, liquid	UN1824	2	563 lbs.	d p
Potassium hydroxide, liquid	UN1814	1	200 lbs.	d
Alkaline liquid, n.o.s.	NA1719	1	3,417 lbs.	d
Corrosive liq., n.o.s.	UN1760	1	1,616 lbs.	p
Corrosive solid, n.o.s.	UN1759	1	11,036 lbs.	p
Hypochlorite solution	UN1791	1	1,734 lbs.	a

	COMMODITY	UN/NA No.	No. of Shipments	Avg. Wt. or Vol.	Container Types
D	Consumer commodity		2	302 lbs.	p

Container Types:
a = can or pail b = bottle c = cylinder d = drum
p = package (case, carton, box) t = tank

FAREWELL BEND PORT-OF-ENTRY

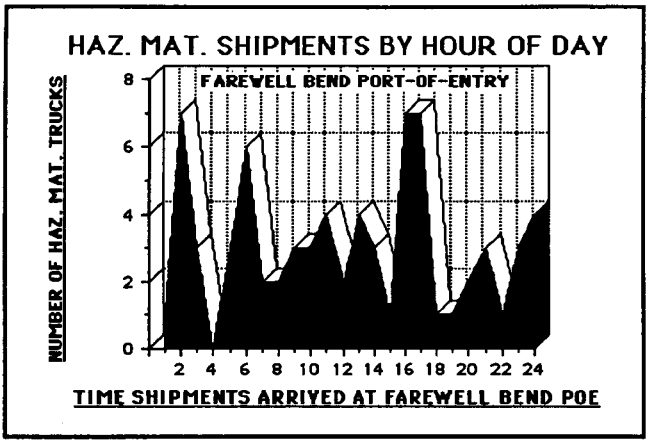
The Farewell Bend port-of-entry is located 25 miles northwest of Ontario, Or. on Interstate 84. Westbound hazard-placarded trucks were surveyed here on November 17, 18, 19, 1987, Tuesday thru Thursday.

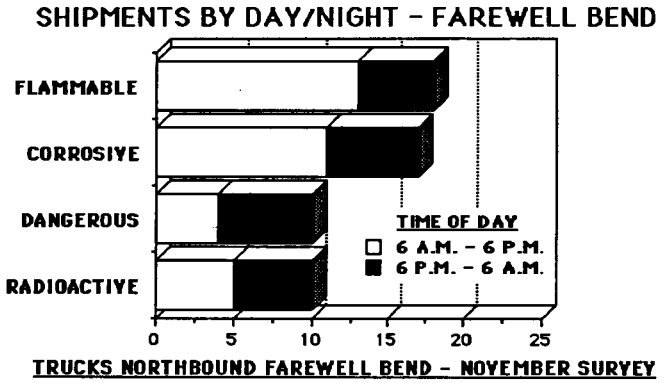
Total traffic across the scale averaged 854 trucks per 24-hour day, 35 per hour. Hazardous material-placarded vehicles within that total averaged almost 25 per 24-hour day, 1 per hour (2.9 percent). Because of the scale's location inside the Oregon border, the traffic survey does not include shipments terminating in the city of Ontario.

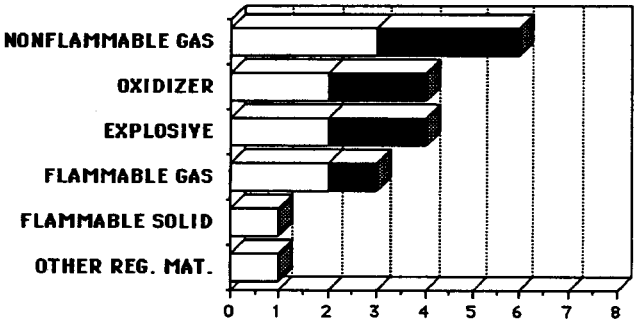
A total of 66 different hazardous materials were recorded aboard the 74 trucks surveyed in the three-day period. Paint and paint related material were among the most common materials transported into the state. The total number of placarded vehicles, and the percentage of flammable hazards moving, increases if the count includes 13 trucks observed traveling empty. The tankers, generally bearing traces of gas or diesel, were returning from Ontario and Idaho. Various corrosives, including a number of shipments of batteries and corrosive liquids, account for 36 of the 66 different materials recorded through Farewell Bend. Overall, corrosives were aboard 1 of every 3 hazard-placarded vehicles surveyed here.

Ten shipments of radioactive material entered Oregon via Farewell Bend during the survey period, all destined for Richland, Wa. and the U.S. Department of Energy's Hanford site. PUC's tracking of such shipments, through its pre-notification program, counted nearly 500 movements entering Oregon from the east in 1987. The top five contributors of material that year were Tennessee, Pennsylvania, Illinois, Ohio and Arkansas. Five of the ten shipments in the survey period were from Oak Ridge, Tennessee, two each from Pennsylvania and Arkansas, and one from Michigan.

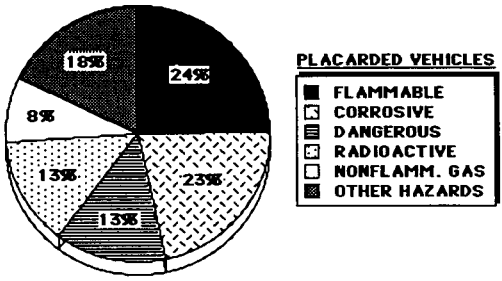
While 18 of the 74 shipments originated across the border in Idaho, and 3 were from the city of Ontario, the remaining 53 shipments originated in 23 different states. The materials transported served 36 Oregon cities in 11 counties, but more than half of the 74 trucks were destined eventually for Washington. A total of 27 trucks exited the state on U.S. 395 near Umatilla, while 15 others traveled north from Portland. The flow of hazardous material traffic surveyed is concentrated between 2 a.m. and 5 p.m., when 80 percent of the 74 vehicles arrived at the Farewell Bend scale.


HAZ. MAT. SHIPMENTS BY HOUR OF DAY
FAREWELL BEND PORT-OF-ENTRY
NUMBER OF HAZ. MAT. TRUCKS
0
2
4
6
8
2 4 6 8 10 12 14 16 18 20 22 24
TIME SHIPMENTS ARRIVED AT FAREWELL BEND POE


SHIPMENTS BY DAY/NIGHT - FAREWELL BEND
FLAMMABLE
CORROSIVE
DANGEROUS
RADIOACTIVE
TIME OF DAY
6 A.M. - 6 P.M.
6 P.M. - 6 A.M.
0
5
10
15
20
25
TRUCKS NORTHBOUND FAREWELL BEND - NOVEMBER SURVEY


NONFLAMMABLE GAS
OXIDIZER
EXPLOSIVE
FLAMMABLE GAS
FLAMMABLE SOLID
OTHER REG. MAT.
0
1
2
3
4
5
6
7
8

FAREWELL BEND PORT-OF-ENTRY



SCALE FAREWELL BEND POE SURVEY DATE NOVEMBER 17,18,19, 1987

	NOVEMBER 17 TUESDAY	NOVEMBER 18 WEDNESDAY	NOVEMBER 19 THURSDAY	SURVEY TOTALS
TOTAL TRUCK TRAFFIC	759	858	945	2,562
PLACARDED VEHICLES % OF TOTAL TRAFFIC	25 3.3%	20 2.3%	29 3.1%	74 2.9%
FLAMMABLE	5	7	6	18
FLAMMABLE SOLID	1			1
FLAMMABLE GAS		1	2	3
NONFLAMMABLE GAS	3	1	2	6
CORROSIVE	3	7	7	17
OXIDIZER	2		2	4
POISON				
DANGEROUS	3	2	5	10
EXPLOSIVES	2		2	4
RADIOACTIVE	5	2	3	10
OTHER REGULATED MAT.	1			1
ADDITIONAL VEHICLES, FLAMMABLE-PLACARDED, RETURNING EMPTY	2	6	5	13

ODOT/PUC HAZARDOUS MATERIAL SURVEY
Hazardous Material Shipments -- Commodity Specific

FAREWELL BEND PORT-OF-ENTRY
Survey Activity - November 17, 18, 19, 1987
1

COMMODITY	UN/NA No.	No. of Shipments	Avg. Wt. or Vol.	Container Types
Paint, lacquer base	UN1263	9	5,313 lbs.	a d p
Paint related mat.	NA1263	2	1,527 lbs.	p
Gasoline	UN1203	3	4,018 gal.	t
Flammable liq., n.o.s.	UN1993	1	1,936 lbs.	d
Isopropanol	UN1219	1	12,120 lbs.	d
Resin solution	UN1866	1	4,950 lbs.	a
Turpentine	UN1299	1	430 lbs.	
Adhesive	UN1133	1	1,260 lbs.	p
Cement	NA1133	1	1,224 lbs.	
Methyl alcohol	UN1230	1	1,008 lbs.	p
Compound, weed killing, liquid	NA1993	1	900 lbs.	d
Ink	UN1210	1	4,915 lbs.	d
Acetone	UN1090	1	408 lbs.	p
Petroleum naphtha	UN1255	1	800 lbs.	d
Ethyl ether	UN1155	1	1,104 lbs.	d
Denatured alcohol	NA1986	1	513 lbs.	
Coating solution	UN1139	1	4,700 lbs.	d

COMMODITY	UN/NA No.	No. of Shipments	Avg. Wt. or Vol.	Container Types
Fuel oil, diesel	NA 1993	2	8,100 gal.	t
Combustible liq., n.o.s.	NA1993	2	6,831 gal.	t
Paint	UN1263	1	4,250 lbs.	p
Paint related mat.	NA1263	1	2,160 lbs.	
Petroleum distillate	UN1268	1	2,000 gal.	t

Container Types:
a = can or pail b = bottle c = cylinder d = drum
p = package (case, carton, box) t = tank

ODOT/PUC HAZARDOUS MATERIAL SURVEY
Hazardous Material Shipments -- Commodity Specific

FAREWELL BEND PORT-OF-ENTRY
Survey Activity - November 17, 18, 19, 1987
2

COMMODITY	UN/NA No.	No. of Shipments	Avg. Wt. or Vol.	Container Types
Aluminum phosphide	UN1397	1	462 lbs.	p

Liquefied petrol. gas	UN1075	1	495 gal.	t
Acetylene	UN1001	1		c
Compressed gas., n.o.s.	UN1954	1	12 lbs.	p
Hydrogen, refrig. liq.	UN1966	1	4,800 lbs.	t

COMMODITY	UN/NA No.	No. of Shipments	Avg. Wt. or Vol.	Container Types
Helium	UN1046	2	1,320 lbs.	c
Helium, refrig. liq.	UN1963	1	8,950 lbs.	t
Nitrogen	UN1066	1		c
Nitrogen, refrig. liq.	UN1977	1	3,000 lbs.	t
Argon	UN1006	1		c
Argon, refrig. liq.	UN1951	1	300 cu. ft.	t
Oxygen	UN1072	1		c
Carbon dioxide	UN1013	1		c
Nitrous oxide	UN1070	1		c
Dichlorodifluoro-methane	UN1028	1	10,680 lbs.	c
Chlorodifluoromethane	UN1018	1	13,400 lbs.	c
Ammonia, anhydrous	UN1005	1		t
Refrigerant gas, n.o.s.	UN1078	1	6,000 lbs.	c
Fire extinguisher	UN1044	1	1,746 lbs.	c

Container Types:
a = can or pail b = bottle c = cylinder d = drum
p = package (case, carton, box) t = tank

ODOT/PUC HAZARDOUS MATERIAL SURVEY
Hazardous Material Shipments -- Commodity Specific

FAREWELL BEND PORT-OF-ENTRY
Survey Activity - November 17, 18, 19, 1987
3

COMMODITY	UN/NA No.	No. of Shipments	Avg. Wt. or Vol.		Container Types
Ammonium nitrate fertilizer	UN2067	3	55,300	lbs.	p
Aluminum nitrate	UN1438	1	47,200	lbs.	t

Nitrogen dioxide	UN1067	1	35	lbs.	

COMMODITY	UN/NA No.	No. of Shipments	Avg. Wt. or Vol.		Container Types
Battery, wet w/acid	UN2794	6	10,613	lbs.	p
Battery, wet	NA2794	2	1,901	lbs.	p
Battery, dry	NA1813	1	4,089	lbs.	p
Battery fluid, acid	UN2796	2	2,545	lbs.	p
Corrosive liquid, n.o.s.	UN1760	5	11,228	lbs.	d p t
Compound, clean., liq.	NA1760	4	5,940	lbs.	p t
Corrosive solid, n.o.s.	UN1759	3	5,889	lbs.	a p
Hypochlorite solution	UN1791	2	2,623	lbs.	a p
Hydrofluorosilicic acid	NA1778	2	2,344	lbs.	p
Phosphoric acid	UN1805	2	18,833	lbs.	d t
Sulfuric acid	UN1830	1	525	lbs.	a
Hydrofluoric acid, solution	UN1790	1	850	lbs.	p
Hydrochloric acid, solution	UN1789	1	280	lbs.	

Container Types:
a = can or pail b = bottle c = cylinder d = drum
p = package (case, carton, box) t = tank

ODOT/PUC HAZARDOUS MATERIAL SURVEY
Hazardous Material Shipments -- Commodity Specific

FAREWELL BEND PORT-OF-ENTRY
Survey Activity - November 17, 18, 19, 1987
4

(continued)

	COMMODITY	UN/NA No.	No. of Shipments	Avg. Wt. or Vol.	Container Types
	Alkaline liquid, n.o.s.	NA1719	1	7,608 lbs.	a
	Sodium hydroxide, liq.	UN1824	1	1,240 lbs.	d
	Sodium hydroxide, dry	UN1823	1	450 lbs.	p
	Potassium hydroxide, liquid	UN1814	1	500 lbs.	p

	High explosive		4	18,405 lbs.	p
	Detonators		1	850 lbs.	p
	Fireworks		1	26 lbs.	

	Radioactive material, LSA, n.o.s.	UN2912	10	38,627 lbs.	p

B	Aluminum sulfate solution	NA1760	1	3,040 lbs.	d
D	Consumer commodity		1	26 lbs.	p
E	Hazardous waste solid, n.o.s.	NA9189	1	18,000 lbs.	p

Container Types:
a = can or pail b = bottle c = cylinder d = drum
p = package (case, carton, box) t = tank

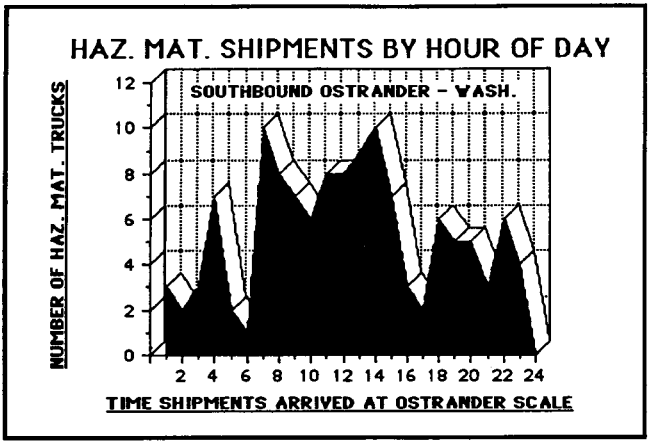
WASHINGTON OSTRANDER

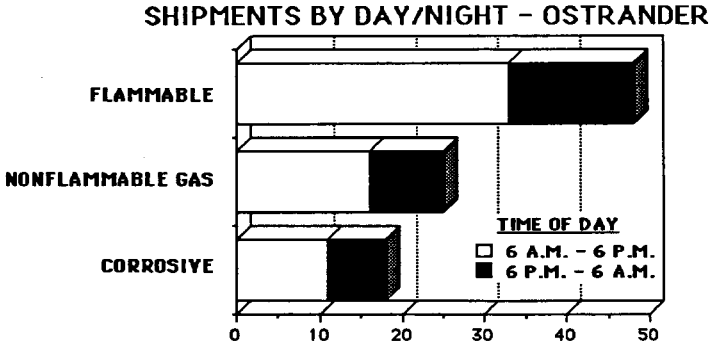
The Ostrander scale is located in Washington state, approximately 50 miles north of Portland on Interstate 5. Ostrander was selected as the best to track movements of hazardous materials from the north, notwithstanding the exclusion of shipments originating in Kelso, Longview, Kalama, Woodland, or other cities south of the site. Southbound hazard-placarded trucks destined for Oregon were surveyed at the Ostrander scale on August, 17, 18 and 19, 1987, Monday thru Wednesday.

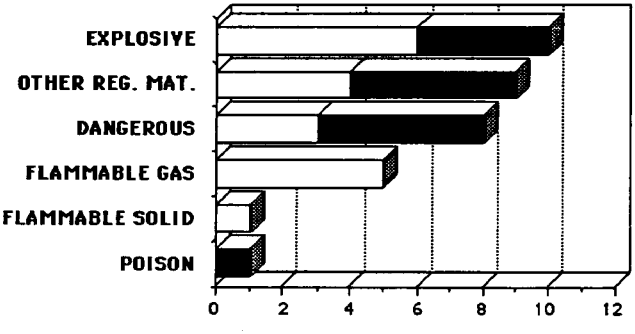
In terms of total traffic across the scale in a three-day period, this facility counted the greatest number of trucks of the four point-of-entry survey sites. The per day average of 1,693 trucks rivals the number recorded northbound on Interstate 5 through Ashland. Based on this survey, the number of Oregon-bound hazardous material shipments amounts to 42 trucks per 24-hour day (2.5 percent of total truck traffic). The number of placarded vehicles destined for Oregon from the north would be greater if shipments originating in Kelso and Longview were included in the survey. Previous surveys of shipments within Oregon discovered a significant number of trucks transporting corrosive material from this Washington area to the Oregon wood products industry.

A total of 69 different hazardous materials were recorded here. Some of the more frequent commodities transported were aviation fuel (from Mulkiteo, Wa. to the Oregon Air National Guard near the Portland International Airport), nonflammable gases (largely from Fife and Kent, Wa. to Multnomah, Yamhill and Marion counties), formaldehyde solution (from Kent, Wa. to Springfield, Or. and Elk Grove, Ca.) and hazardous waste, liquid and solid (from Kent and Tacoma, Wa. to Arlington, Or.). The majority of the survey's ten trucks transporting explosives were traveling through Oregon to another state.

The flow of hazardous material traffic surveyed is concentrated between 7 a.m. and 4 p.m., when 76 of the 125 vehicles arrived at the Ostrander scale. The timing places the majority of shipments at the Oregon border between 8 a.m. and 5 p.m.

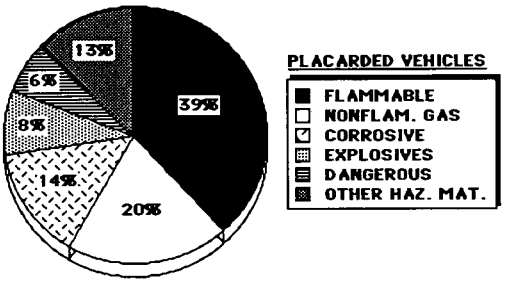

HAZ. MAT. SHIPMENTS BY HOUR OF DAY
SOUTHBOUND OSTRANDER - WASH.
NUMBER OF HAZ. MAT. TRUCKS
0
2
4
6
8
10
12
2 4 6 8 10 12 14 16 18 20 22 24
TIME SHIPMENTS ARRIVED AT OSTRANDER SCALE


SHIPMENTS BY DAY/NIGHT - OSTRANDER
FLAMMABLE
NONFLAMMABLE GAS
CORROSIVE
TIME OF DAY
6 A.M. - 6 P.M.
6 P.M. - 6 A.M.
0
10
20
30
40
50
TRUCKS SOUTHBOUND OSTRANDER - AUGUST SURVEY


EXPLOSIVE
OTHER REG. MAT.
DANGEROUS
FLAMMABLE GAS
FLAMMABLE SOLID
POISON
0
2
4
6
8
10
12

SOUTHBOUND OSTRANDER - WASHINGTON

SHIPMENTS DESTINED WITHIN, OR PASSING THROUGH, OREGON



SCALE SOUTHBOUND OSTRANDER SURVEY DATE AUGUST 17,18,19, 1987

	AUGUST 17 MONDAY	AUGUST 18 TUESDAY	AUGUST 19 WEDNESDAY	SURVEY TOTALS
TOTAL TRUCK TRAFFIC	1,763	1,758	1,557	5,078
PLACARDED VEHICLES % OF TOTAL TRAFFIC	41 2.3%	34 1.9%	50 3.2%	125 2.5%
FLAMMABLE	16	11	21	48
FLAMMABLE SOLID		1		1
FLAMMABLE GAS		3	2	5
NONFLAMMABLE GAS	6	9	10	25
CORROSIVE	8	5	5	18
OXIDIZER				
POISON		1		1
DANGEROUS	4		4	8
EXPLOSIVES	2	3	5	10
RADIOACTIVE				
OTHER REGULATED MAT.	5	1	3	9

*Numbers indicate only those placarded vehicles destined within, or passing through, Oregon. The Ostrander scale is located 49 miles north of Vancouver, Washington.

ODOT/PUC HAZARDOUS MATERIAL SURVEY
Hazardous Material Shipments -- Commodity Specific

SOUTHBOUND OSTRANDER - WASH.
Survey Activity - August 17, 18, 19, 1987
1

COMMODITY	UN/NA No.	No. of Shipments	Avg. Wt. or Vol.		Container Types
Fuel, aviation	UN1863	14	10,005	gal.	t
Paint, lacquer base	UN1263	8	2,799	lbs.	a d p
Paint related material	NA1263	1	117	lbs.	a
Gasoline	UN1203	5	10,696	lbs.	a t
Flamm. liquid, n.o.s.	UN1993	4	7,394	lbs.	d p t
Adhesive	UN1133	3	269	gal.	a
Oil, n.o.s.	NA1270	3	6,475	gal.	d t
Resin solution	UN1866	2	3,240	gal.	d
Denatured alcohol	NA1986	1	47,558	lbs.	t
Styrene monomer, inhibited	UN2055	1	6,495	gal.	t
Coating solution	UN1139	1	2,000	lbs.	a
Organophosphorus pesticide	UN2784	1	900	lbs.	a
Ethyl alcohol	UN1170	1	8	lbs.	p
Toluene	UN1294	1			

COMMODITY	UN/NA No.	No. of Shipments	Avg. Wt. or Vol.		Container Types
Formaldehyde solution	UN2209	9	50,622	lbs.	t
Petroleum oil, n.o.s.	NA1270	3	6,886	gal.	t
Alcohol, n.o.s.	UN1987	1	38,700	lbs.	t
Coal tar distillate	UN1137	1	6,500	gal.	t
Kerosene	UN1223	1	3,750	gal.	t
Petroleum naphtha	UN1255	1	3,250	gal.	t
Paint	UN1263	1	790	lbs.	a

Container Types:
a = can or pail b = bottle c = cylinder d = drum
p = package (case, carton, box) t = tank

ODOT/PUC HAZARDOUS MATERIAL SURVEY
Hazardous Material Shipments -- Commodity Specific

SOUTHBOUND OSTRANDER - WASH.
Survey Activity - August 17, 18, 19, 1987
2

COMMODITY	UN/NA No.	No. of Shipments	Avg. Wt. or Vol.	Container Types
Flammable solid, n.o.s.	UN1325	1		

COMMODITY	UN/NA No.	No. of Shipments	Avg. Wt. or Vol.	Container Types
Liquefied petrol. gas	UN1075	3	9,336 gal.	t
Acetylene	UN1001	1	2,500 cu. ft.	b
Hydrogen	UN1049	1	390 cu. ft.	b
Compressed gas, n.o.s.	UN1954	1	30 lbs.	b

COMMODITY	UN/NA No.	No. of Shipments	Avg. Wt. or Vol.	Container Types
Nitrogen	UN1066	1	912 cu. ft.	b
Nitrogen, refrig. liq.	UN1977	10	660,000 cu. ft.	t
Oxygen	UN1072	1	6,494 cu. ft.	b
Oxygen, refrig. liquid	UN1073	9	560,000 cu. ft.	t
Argon	UN1006	1	336 cu. ft.	b
Argon, refrig. liquid	UN1951	2	440,000 cu. ft.	t
Carbon dioxide	UN1013	1	19,516 lbs.	b
Carbon dioxide, refrigerated liquid	UN2187	1	10,100 lbs.	t
Helium	UN1046	2	84,162 cu. ft.	b t
Ammonia, anhydrous	UN1005	2	6,696 lbs.	t
Compressed gas, n.o.s.	UN1956	2	3,990 cu. ft.	b p
Chlorine	UN1017	1		

Container Types:
a = can or pail b = bottle c = cylinder d = drum
p = package (case, carton, box) t = tank

ODOT/PUC HAZARDOUS MATERIAL SURVEY
Hazardous Material Shipments -- Commodity Specific

SOUTHBOUND OSTRANDER - WASH.
Survey Activity - August 17, 18, 19, 1987
3

COMMODITY	UN/NA No.	No. of Shipments	Avg. Wt. or Vol.	Container Types
Methyl ethyl ketone peroxide	UN2550	1	3, 360 gal.	d
Organic peroxide, liquid, n.o.s.	NA9183	1	320 lbs.	d

COMMODITY	UN/NA No.	No. of Shipments	Avg. Wt. or Vol.	Container Types
Calcium hypochlorite, mixture, dry	UN1748	1		
Hydrogen peroxide solution	UN2014	1		

COMMODITY	UN/NA No.	No. of Shipments	Avg. Wt. or Vol.	Container Types
Azinphos methyl, solid	NA2783	1	120 lbs.	p
Cyanide mixture, dry	UN1588	1	770 lbs.	d
Poisonous solid, corrosive, n.o.s.	UN2928	1		

Container Types:
a = can or pail b = bottle c = cylinder d = drum
p = package (case, carton, box) t = tank

ODOT/PUC HAZARDOUS MATERIAL SURVEY
Hazardous Material Shipments -- Commodity Specific

SOUTHBOUND OSTRANDER - WASH.
Survey Activity - August 17, 18, 19, 1987
4

COMMODITY	UN/NA No.	No. of Shipments	Avg. Wt. or Vol.	Container Types
Battery, wet w/acid	UN2794	4	25,700 lbs.	p
Battery fluid, acid	UN2796	2	37,250 lbs.	p
Alkaline liquid, n.o.s.	NA1719	3	18,812 lbs.	d t
Sulfuric acid	UN1830	3	51,880 lbs.	t
Sodium hydroxide, liquid	UN1824	2	26,550 lbs.	d t
Hydrochloric acid, mixture	NA1789	2	43,780 lbs.	t
Hypochlorite solution	UN1791	2	3,000 gal.	t
Compound, clean., liq.	NA1760	2	1,996 lbs.	d
Corrosive liquid, n.o.s.	UN1760	2	2,550 lbs.	d

COMMODITY	UN/NA No.	No. of Shipments	Avg. Wt. or Vol.	Container Types
High explosive		5	475 lbs.	p
Detonators		3		
Mine		2	23,265 lbs.	p
Explosive projectile		1	94 lbs.	p
Torpedoes		1		
Detonating fuze		2	226 lbs.	p
Detonators		1		
Detonating cord		1		
Cannon primer		1	95 lbs.	p
Small arms ammunition		1	45 lbs.	p
Ammonium nitrate - fuel oil mixture		1	10,000 lbs.	p
Blasting agent, n.o.s.		1		

Container Types:
a = can or pail b = bottle c = cylinder d = drum
p = package (case, carton, box) t = tank

ODOT/PUC HAZARDOUS MATERIAL SURVEY
Hazardous Material Shipments -- Commodity Specific

SOUTHBOUND OSTRANDER - WASH.
Survey Activity - August 17, 18, 19, 1987
5

ORM

	COMMODITY	UN/NA No.	No. of Shipments	Avg. Wt. or Vol.	Container Types
A	Trichloroethane	UN2831	1	150 gal.	d
	Trichloroethylene	UN1710	1	154 gal.	d t
E	Hazardous waste, liquid, n.o.s.	NA9189	6	2,640 lbs.	d t
	Hazardous waste, solid, n.o.s.	NA9189	3	33,493 lbs.	p

Container Types:
a = can or pail b = bottle c = cylinder d = drum
p = package (case, carton, box) t = tank

APPENDIX

Oregon Department of Transportation
HIGHWAY DIVISION

HAZARDOUS MATERIAL SURVEY

PUC

MONTH	JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC
DATE	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
DAY	MONDAY TUESDAY WEDNESDAY THURSDAY FRIDAY SATURDAY SUNDAY
HOUR	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

(Circle)

PLACARD/HAZARD CLASS

HAZARDOUS MATERIAL

SHIPPING NAME	UN/NA No.

QUANTITY — POUNDS | GALLONS | CUBIC FEET | OTHER (COPY SHIPPING PAPERS)

CONTAINER TYPE — TANK | DRUMS | CYLINDER | CASES | CANS | BOTTLES | BOXES | OTHER

ADDITIONAL SPACE ON BACK OF FORM FOR OTHER HAZARDOUS MATERIAL ON BOARD

ROUTE

ORIGIN

OR. ENTRY POINT (IF APPLICABLE)

DESTINATION 1. 2. 3. 4.

OR. PT. OF EXIT

Roadways (circle all traveled)

Interstate Highways: 5, 105, 205, 405, 84

U.S. Highways: 20, 26, 30, 30 BUS, 30 BY, 95, 95 SPUR, 97, 101, 101 BUS, 197, 199, 395, 730

Oregon State Highways: 3, 6, 7, 8, 10, 11, 18, 18 BUS, 19, 22, 27, 31, 34, 35, 36, 37, 39, 39, 42, 42 S, 43, 46, 47, 51, 52, 53, 58, 62, 66, 70, 74, 78, 82, 86, 99, 99 W, 99 E, 126, 126 BUS, 138, 140, 201, 202, 203, 204, 205, 206, 207, 210, 211, 212, 213, 214, 216, 217, 218, 219, 221, 223, 224, 226, 227, 228, 229, 230, 232, 233, 234, 237, 238, 240, 242, 244, 245

Survey by	PUC Plate or Temp Pass No.	Survey Location

PLEASE ATTACH COPIES OF SHIPPING PAPERS WITH INCOMPLETE QUANTITY INFO.

HAZARDOUS MATERIAL

2. SHIPPING NAME	UN/NA No.

QUANTITY ____ POUNDS ____ GALLONS ____ CUBIC FEET ____ OTHER (COPY SHIPPING PAPERS)

CONTAINER TYPE ☐ TANK ☐ DRUMS ☐ CYLINDER ☐ CASES ☐ CANS ☐ BOTTLES ☐ BOXES ☐ OTHER

HAZARDOUS MATERIAL

3. SHIPPING NAME	UN/NA No.

QUANTITY ____ POUNDS ____ GALLONS ____ CUBIC FEET ____ OTHER (COPY SHIPPING PAPERS)

CONTAINER TYPE ☐ TANK ☐ DRUMS ☐ CYLINDER ☐ CASES ☐ CANS ☐ BOTTLES ☐ BOXES ☐ OTHER

HAZARDOUS MATERIAL

4. SHIPPING NAME	UN/NA No.

QUANTITY ____ POUNDS ____ GALLONS ____ CUBIC FEET ____ OTHER (COPY SHIPPING PAPERS)

CONTAINER TYPE ☐ TANK ☐ DRUMS ☐ CYLINDER ☐ CASES ☐ CANS ☐ BOTTLES ☐ BOXES ☐ OTHER

HAZARDOUS MATERIAL

5. SHIPPING NAME	UN/NA No.

QUANTITY ____ POUNDS ____ GALLONS ____ CUBIC FEET ____ OTHER (COPY SHIPPING PAPERS)

CONTAINER TYPE ☐ TANK ☐ DRUMS ☐ CYLINDER ☐ CASES ☐ CANS ☐ BOTTLES ☐ BOXES ☐ OTHER

HAZARDOUS MATERIAL

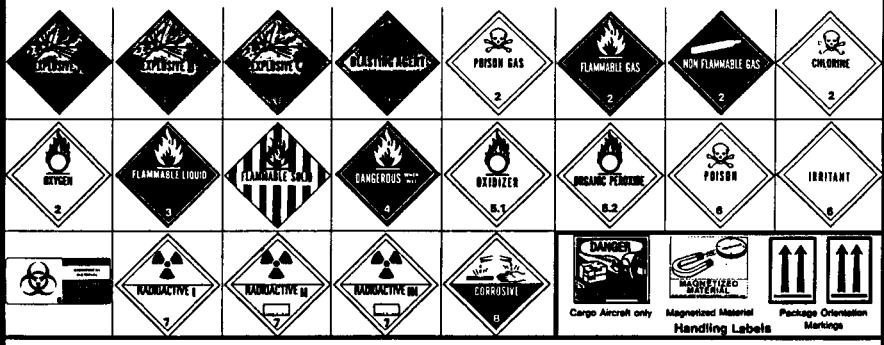
6. SHIPPING NAME	UN/NA No.

QUANTITY ____ POUNDS ____ GALLONS ____ CUBIC FEET ____ OTHER (COPY SHIPPING PAPERS)

CONTAINER TYPE ☐ TANK ☐ DRUMS ☐ CYLINDER ☐ CASES ☐ CANS ☐ BOTTLES ☐ BOXES ☐ OTHER

Hazardous Materials Warning Labels

DOMESTIC LABELING



Handling Labels

General Guidelines on Use of Labels

(CFR, Title 49, Transportation, Parts 100-177)

- Labels illustrated above are normally for *domestic shipments*. However, some air carriers *may* require the use of International Civil Aviation Organization (ICAO) labels.
- Domestic Warning Labels *may* display UN Class Number, Division Number (and Compatibility Group for Explosives only.) Sec. 172.407(g).
- Any person who offers a hazardous material for transportation MUST label the package, if required. [Sec. 172.400(a)].
- The Hazardous Materials Tables, Sec. 172.101 and 172.102, identify the proper label(s) for the hazardous materials listed.
- Label(s), when required, must be printed on or affixed to the surface of the package near the proper shipping name. [Sec. 172.406(a)].
- When two or more different labels are required, display them next to each other. [Sec. 172.406(c)].
- Labels may be affixed to packages (even when not required by regulations) provided each label represents a hazard of the material in the package. [Sec. 172-401].

Check the Appropriate Regulations

Domestic or International Shipment

UN Class Numbers

Class 1—Explosives

Class 2—Gases (compressed, liquified or dissolved under pressure)

Class 3—Flammable liquids

Class 4—Flammable solids or substances

Class 5—Oxidizing substances
Division 5.1-Oxidizing substances or agents.
Division 5.2-Organic peroxides.

Class 6—Poisonous and infectious substances

Class 7—Radioactive substances

Class 8—Corrosives

Class 9—Miscellaneous dangerous substances

INTERNATIONAL LABELING

EXAMPLES OF INTERNATIONAL LABELS

- These are examples of International Labels not presently used for domestic shipments.
- Text, when used Internationally *may* be in the language of the country of origin.
- Most of the domestic labels (illustrated above) *may* be used Internationally.

EXAMPLES OF EXPLOSIVE LABELS

- The NUMERICAL DESIGNATION represents the CLASS or DIVISION.
- ALPHABETICAL DESIGNATION represents the COMPATIBILITY GROUP (for Explosives Only)
- DIVISION NUMBERS and COMPATIBILITY GROUP combinations can result in over 30 different "Explosives" labels (see IMDG Code/ICAO).

For complete details, refer to one or more of the following:

- Code of Federal Regulations, Title 49, Transportation. Parts 100-199. [All Modes]
- International Civil Aviation Organization (ICAO) Technical Instructions for the Safe Transport of Dangerous Goods by air. [Air]
- International Maritime Organization (IMO) Dangerous Goods Code. [Water]
- "Transportation of Dangerous Goods Regulations" of Transport Canada. [All Modes]

U.S. Department of Transportation

Research and Special Programs Administration

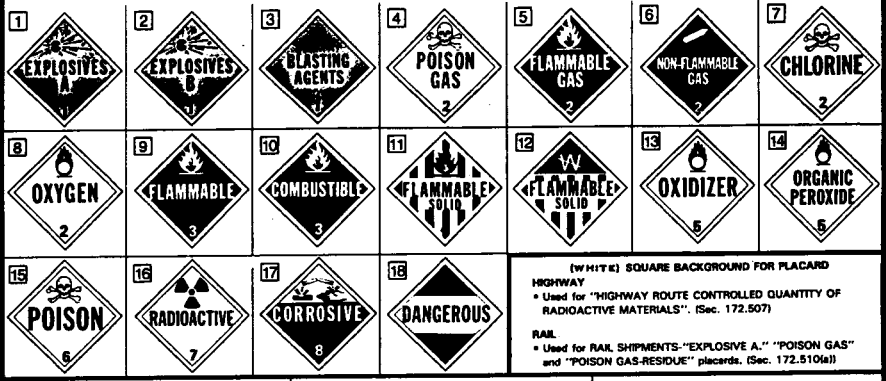
Washington, D.C. 20590

CHART 8
REV. FEBRUARY 1988

Hazardous Materials Warning Placards

DOMESTIC PLACARDING

Illustration numbers in each square ([1] through [18]) refer to TABLES 1 and 2 below.



(WHITE) SQUARE BACKGROUND FOR PLACARD

HIGHWAY

- Used for "HIGHWAY ROUTE CONTROLLED QUANTITY OF RADIOACTIVE MATERIALS". (Sec. 172.507)

RAIL

- Used for RAIL SHIPMENTS-"EXPLOSIVE A," "POISON GAS" and "POISON GAS-RESIDUE" placards. (Sec. 172.510(a))

TABLE 1

HAZARD CLASSES	*NO.
Class A explosives	1
Class B explosives	2
Poison A	4
Flammable solid (DANGEROUS WHEN WET label only)	12
Radioactive material (YELLOW III label)	16
Radioactive material:	
Uranium hexafluoride fissile (containing more than 1.0% U^{235})	16 & 17
Uranium hexafluoride, low-specific activity (containing 1.0% or less U^{235})	16 & 17

NOTE: For details on the use of Tables 1 and 2, see Sec. 172.504 (See footnotes at bottom of tables.)

Guidelines

(CFR, Title 49, Transportation, Parts 100-177)

- Placard *motor vehicles, freight containers,* and *rail cars* containing *any quantity* of hazardous materials listed in TABLE 1.
- Placard *motor vehicles, freight containers* and *rail cars* containing 1,000 pounds or more gross weight of hazardous materials classes listed in TABLE 2.
- Placard *freight containers* 640 cubic feet or more containing *any quantity* of hazardous material classes listed in TABLES 1 and/or 2 when offered for transportation by air or water. Under 640 cubic feet see Sec. 172.512(b).

CAUTION

CHECK EACH SHIPMENT FOR COMPLIANCE WITH THE APPROPRIATE HAZARDOUS MATERIALS REGULATIONS:

Proper Classification Marking Placarding
Packaging Labeling Documentation

PRIOR TO OFFERING FOR SHIPMENT

TABLE 2

HAZARD CLASSES	*NO.
Class C explosives	18
Blasting agent	3
Nonflammable gas	6
Nonflammable gas (Chlorine)	7
Nonflammable gas (Fluorine)	15
Nonflammable gas (Oxygen, cryogenic liquid)	8
Flammable gas	5
Combustible liquid	10
Flammable liquid	9
Flammable solid	11
Oxidizer	13
Organic peroxide	14
Poison B	15
Corrosive material	17
Irritating material	18

INTERNATIONAL PLACARDING

- Most international placards are similar (color and pictorial symbol(s)) to the Domestic placards illustrated above.
- International placards are enlarged ICAO or IMO labels (See International Labeling—Otherside).
- Placard MUST correspond to *hazard class* of material.
- Placard *ANY QUANTITY* of hazardous materials when loaded in FREIGHT CONTAINERS, PORTABLE TANKS, RAIL CARS and HIGHWAY VEHICLES.
- International placards *may* be used *in addition* to DOT placards for international shipments

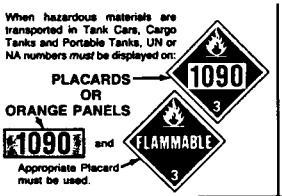
When required, *Subsidiary Risk placards* must be displayed in the same manner as *Primary Risk placards*. Class numbers are *not shown* on Subsidiary Risk placards.

- COMPATIBILITY GROUP DESIGNATORS *must* be displayed on EXPLOSIVES PLACARDS.
- UN CLASS NUMBERS and DIVISION NUMBERS *MUST* be displayed on hazard class placards when required.

UN and NA Identification Numbers

- The four digit UN or NA numbers must be displayed on all hazardous materials packages for which identification numbers are assigned. Example: ACETONE UN 1090.
- UN (United Nations) or NA (North American) numbers are found in the Hazardous Materials Tables, Sec. 172.101 and 172.102 (CFR, Title 49, Parts 100-199)
- Identification numbers may not be displayed on "POISON GAS," "RADIOACTIVE" or "EXPLOSIVE" placards. (Sec. 172.334)
- UN numbers are displayed in the same manner for both Domestic and International shipments.
- NA numbers are used only in the USA and Canada.

When hazardous materials are transported in Tank Cars, Cargo Tanks and Portable Tanks, UN or NA numbers *must* be displayed on:



EUROPEAN NUMBERING SYSTEM—

Top Number—Hazard Index (Identification of Danger, 2 or 3 figures) Example: 33 = highly inflammable liquid.

Bottom Number—UN Number of substance Example: 1088 ACETAL

For more complete details on identification Numbers see Sec. 172.300 through 172.338.